Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

SF487
.S642
1910

Twentieth Century Poultry Culture

Rev. G. R. Smith

Illustrated with Megargee Drawings

Published by
Item Publishing Company, Sellersville, Pennsylvania

United States
Department of
Agriculture

National Agricultural Library

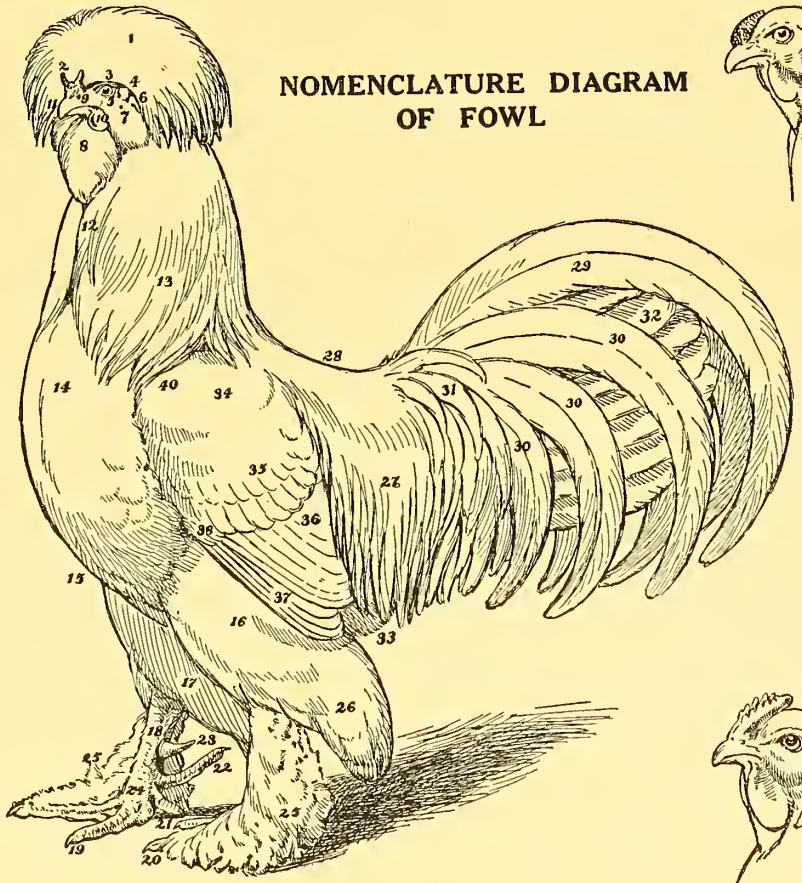
B

A, shows a single comb; B, a rose comb of the Hamburg type; C, a "strawberry" comb; D, a pea comb.

A

EDWIN MEGARGEE
24-1915 © MATOS-MENZ ADV CO INC

NOMENCLATURE DIAGRAM OF FOWL



C

D

1—Crest.
2—Comb
3—Eye.
4—Ear.
5—Face.
6—Ear lobe.
7—Muffs.
8—Beard.
9—Nostril.
10—Wattles.
11—Beak.
12—Neck.
13—Hackle.
14—Breast.
15—Keel.
16—Thigh.
17—Hock joint.
18—Shank.
19—Third toe.
20—Middle toe.
21—Fourth toe.
22—Fifth toe.
23—Spur.
24—Foot.
25—Toe feathers.
26—Vulture hock.
27—Saddle.
28—Back.
29—Sickles.
30—Lesser sickles.
31—Tail coverts.
32—Main tail feathers.
33—Abdomen.
34—Wing-bow.
35—Wing-bar.
36—Secondaries forming wing-bay.
37—Primaries or flights.
38—Flight-coverts.
40—Shoulders.

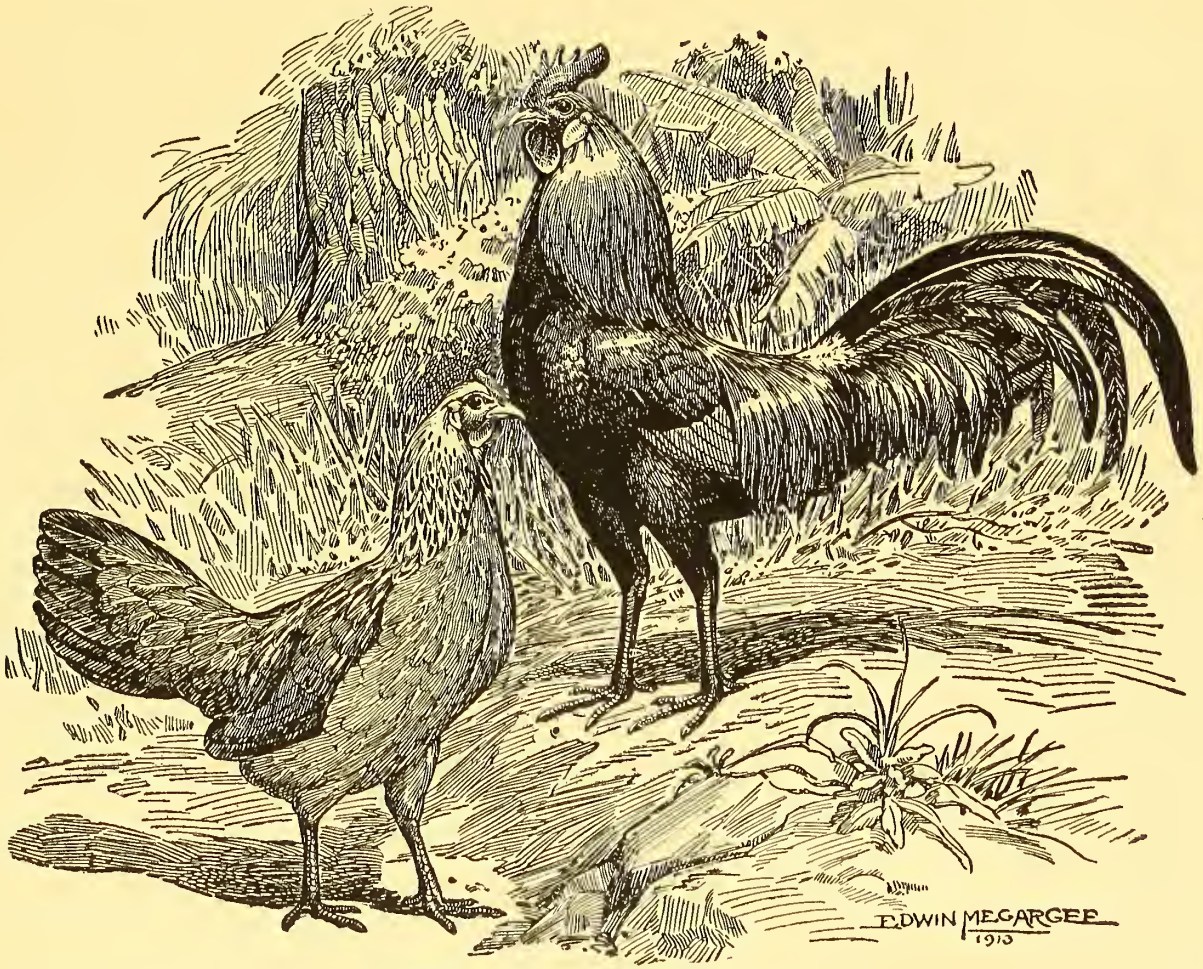
Nomenclature Diagram of Fowl

In order to make descriptions of fowls intelligible, poultrymen have named the various body sections. The accompanying chart plainly shows each feature, and should be preserved for future reference. The drawing is of a Sultan male. Various types of combs are illustrated by A, B, C and D.

A HANDY CHART FOR POULTRY BREEDERS

As the art of poultry breeding was developed, poultrymen began to feel the necessity of giving each section of a fowl some descriptive name. In the course of time, a complete system was evolved which greatly simplified a condition that was becoming decidedly complex.

The accompanying diagram shows every section of a domestic fowl, and the following list gives the name of each. This is in accordance with the system adopted by the American Poultry Association.



THE RED JUNGLE FOWL

The Red Jungle Fowl

The Red Jungle Fowl of India, known to scientists as "Gallus bankiva," is generally recognized as being the wild stock from which all our breeds and varieties of domestic fowls have descended. When one considers the great range in size, the vast differences in color, type, ornamental appendages and productive ability of our domestic fowls it seems almost incredible that all have sprung from this one sort. A few authorities hold that this is impossible and that the blood of other wild breeds must have been used, though this view is not generally accepted. The Red Jungle Fowl is small in size, single-combed, clean-shanked, and its markings are perpetuated in the modern Black Breasted Red Game Bantam. Living specimens are to be found in large zoological gardens and in the pens of a few collectors. Skins and mounted specimens are included in most large ornithological collections.

THE PROGENITOR OF DOMESTIC BREEDS OF FOWLS

The Red Jungle Fowl (Gallus ferrugineus, or bankiva), shown in this illustration, is a native of India and is generally conceded to be the progenitor of all breeds of domestic chickens.

While none denies that all of our presentday varieties trace back to this fowl, there are many who dissent from the opinion that it is their sole ancestor; they claim that the three other recognized varieties of the Jungle Fowl, viz., the forked tail (Gallus varius), the gray (Gallus Sonneratii) and the Ceylon Jungle Fowl (Gallus Lafayettii) also played an important part by breeding with the Red Jungle Fowl. Where so many eminent authorities differ, as they do in this matter, it is perhaps difficult to form an opinion as to the merits of the varying claims. However, aside from theory, the claims of the Red Jungle Fowl adherents seem quite reasonable, and received added force when one considers that in many instances where wild fowl of the same family, but of different varieties, have crossed, the resulting progeny, if there be any are almost invariably infertile.

C. William Beebe, the curator of ornithology at the Bronx Zoological Gardens, in New York, an eminent authority and one who has made an exhaustive study of the matter, having travelled through India and Ceylon for this very purpose, is most emphatic on the subject, and expressed himself to the writer as being convinced beyond a doubt that the Red Jungle Fowl is the sole and only progenitor of the domestic chicken.

The Red Jungle Fowl is much smaller than the average domestic bird, being little larger than many bantams. In appearance it very closely resembles the Black Breasted Red Game Bantam, and, excepting a few minor differences, it is almost identical with this variety in color.

The color of the leg is lead instead of willow, which is the principal color difference in the male. In the female the back has more brown in it than a well bred Black Red Game hen should have, and the hackle markings are much coarser, while throughout the body plumage the shafting of the feathers is much more apparent. These color differences between the Red Jungle Fowl and the Black Red Game are very slight and would scarcely be apparent to the unitiated.

In the cock the comb and wattles are very like those of the domestic cock, but in the hen these appendages are very small and in some specimens are almost totally lacking.

The cock carries his tail lower and more after the manner of the pheasant than the domestic fowl.

This fowl has been and is bred in captivity with some success, notably so by Homer Davenport, the cartoonist.

U.S.D.A., NAL
JUL 3 2003
CATALOGING PREP

Introduction

The series of articles from the pen of Rev. G. R. Smith is a faithful presentation of information and inspiration that deserves placing in a permanent volume. For many years Mr. Smith has been a leading contributor to the poultry magazines of the country. As the "Poultry Item" was his "first love" there is mutual honor in compiling this knowledge in book form. In this volume are valuable and useful helps to awaken interest and courage to take up poultry culture and other outdoor work with an enthusiasm that only one, who has traveled the road, can inspire.

Accompanying and embellishing this book are the drawings of Edwin Megargee and breed descriptions of F. H. Stoneburn. These features appear in bound form for the first time and are worthy the careful study of the poultry world. The publishers acknowledge their indebtedness to these co-laborers and bespeak a reception of their efforts worthy their high standing in the poultry world.

THE PUBLISHERS.

Poultry As Old Age Insurance

During the past few years about the only thing we have been sure of in our lives has been that there would be a degree of economic uncertainty and anxiety. One group of people who have been peculiarly susceptible to the material uncertainties and progressive inflation of the past few years is that portion of the population who are reaching retirement age. A sizeable percentage of this group consists of people of modest means whose plans for retirement were based on the purchasing power of a pre-inflation dollar. Many people who did not work in industry, or jobs covered by social security, have only their own savings to keep them in independence in their later years and the savings of those earlier years are not adequate to cover the sharply increased cost of living. Many people now find it necessary to keep on working beyond the years they had originally planned, because of the depreciated buying power of the dollar.

Some Disqualifications

For those people who find it necessary to supplement their income, and who also want some activity that can be pleasant and congenial for them, there is still the possibility of operating a small poultry plant. It would, of course, be quite wrong to imply that the keeping of some chickens is the answer to everyone's old age problem, so let us consider some of the disqualifications first.

A primary requirement is that the person engaging in this enterprise should not be frail or in poor health, because it will be necessary to give a considerable amount of daily attention to the flock, and in all kinds of weather. If he is fortunate enough to be able to hire someone to do the occasional heavy lifting, such as cleaning roosts or pits or clearing out litter, or if he is able to spread this portion of his work over the week so that he is not unduly taxed, a person of average good health for his age will not find the demands made upon his physique too much. Finally it would seem that a person who has never had any previous experience on a farm or with poultry has a substantial, but by no means insuperable, handicap to overcome.

Size of the Flock

With these reservations clearly in mind, let us look at some of the positive qualifications that an older person brings to this work. Usually at this time of life a person is happiest in a job that calls for a certain amount of daily routine. The poultry business does just that. Probably more tolerant than when he was younger, the elderly operator is likely to think chickens less stupid than he did in his earlier years. But most important of all, he may find, in his old-age undertaking, a pleasant job that he can gauge to his physical capacity, one that helps to make his later years solvent, and helps to preserve his dignity and independence.

Assuming that the poultryman has some land and a building or two, adequate for housing poultry, or which can be converted at a moderate cost, let us try to figure what is the minimum number of chickens that he can keep and get a moderate income for the time and capital involved. It is axiomatic in the poultry business that one should keep the maximum number of chickens with the minimum amount of work consistent with good management practice, and that one should utilize available buildings and equipment as fully as possible throughout the year.

A flock of 500 laying hens should be set as the goal; and that number might be increased or decreased slightly according to the physical ability of the operator. Five hundred birds of one of the heavy breeds can be housed in a two story, 20 by 50 foot house, approximately two square feet per bird, and leave enough room for grain storage and dressing of poultry. I have found this to be room enough for my New Hampshires, although some prefer to give the birds more space. Cool storage space for eggs will be required but frequently the house cellar, if it stays below 50 degrees, will serve that purpose. With fluctuating egg and grain prices and the imponderables that enter into each individual situation it is not possible to give the exact income that will accrue from such a flock, but it should be able to net the operator somewhere around $100 a month. If a dressed poultry business on a small scale is conducted in conjunction with the egg production, and the culled fowl are sold at retail, the poultryman should realize proportionately a fair additional profit.

Not Much Land Needed

For a poultry enterprise on this scale, a great deal of land is not needed. About four acres of land will provide enough room to raise 1,000 pullets for replacement (rigid culling should be practiced), allow for the buildings and make a compact working unit that should not overtax the operator. Furthermore, all of this land does not need to be fertile, though it should be dry and well-drained. And of course the sod on the range should be kept in good condition by a winter or early spring application of [illegible] phosphate, and by having the g[illegible] mowed two or three times while [illegible] pullets are on range. By having t[illegible] ge near the main poultry house, [illegible] possible to lay water pipes on top [illegible] the ground and conduct water to [illegible] he growing chickens at a relatively cheap price.

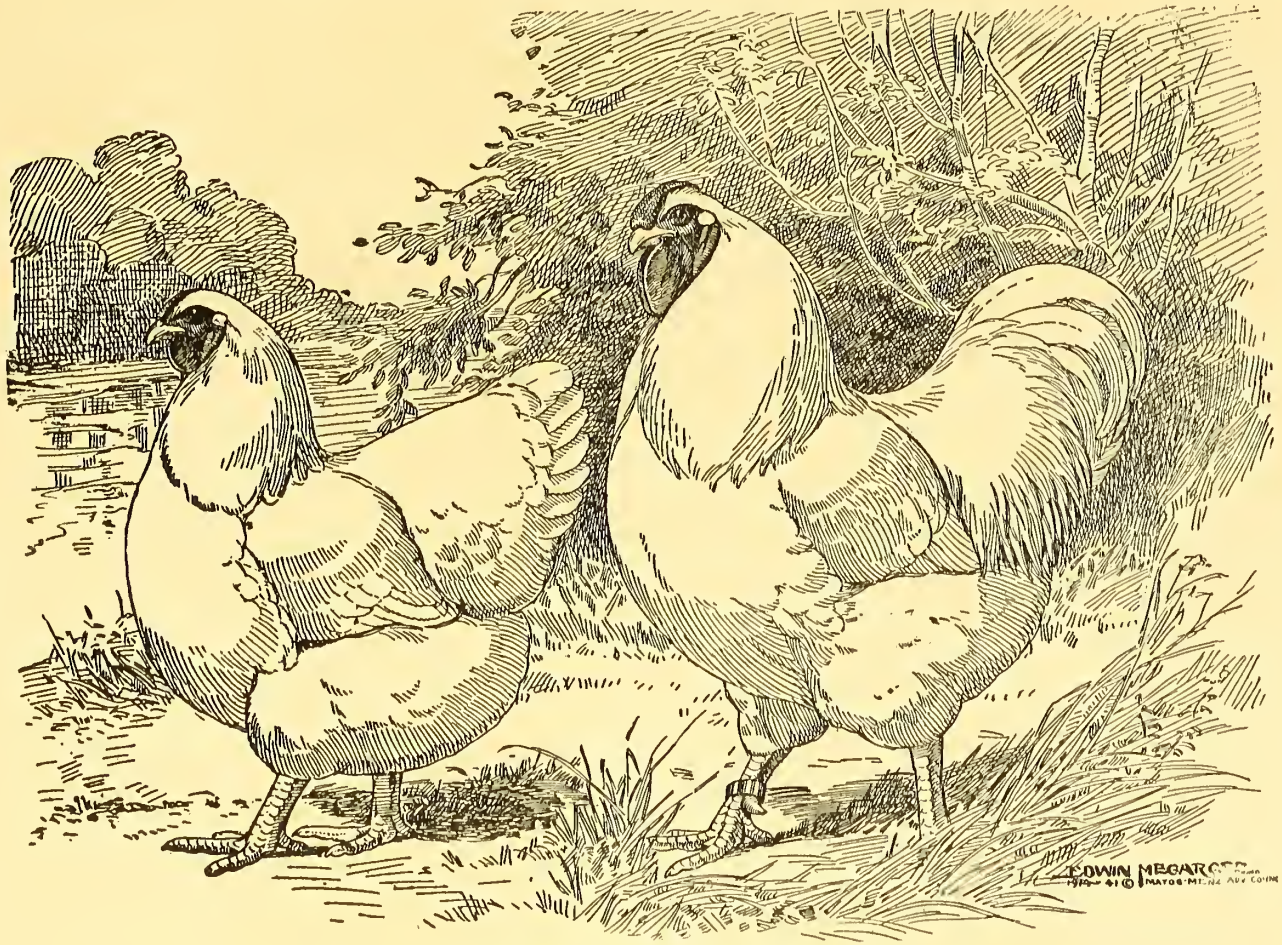
It will not be feasible for the operator of such a small poultry plant to spend a lot of capital for the kind of laborsaving devices that are essential for the operation of a large-scale business. The one essential laborsaving device for him is running water in the hen house, as carrying water for this number of chickens is much too heavy and wasteful a job for anyone. Electric lights are quite essential, and their installation should not be too expensive. A time clock to operate the lights will certainly save many a trip to and from the hen house. On each poultry farm the owner will be able to carry out improvements from time to time which he discovers wi[illegible] facilitate his work and reduce so[illegible] of the heavier chores. A pully ad[illegible] here or a grain chute somew[illegible] else, a water pipe extended o[illegible] other electric outlet may ligh[illegible] work and make the plant t[illegible] more efficient. Daily cleani[illegible] ing and packing the eggs wh[illegible] been layed the previous da[illegible] prevent them from accumul[illegible] and making too big a job all at o[illegible]

In spite of the fact that poult[illegible] units have tended to become larger and more mechanized, there is still very definitely a place for the small poultry producer. Whether it be the farmer who decides to restrict the activities of his later years to a moderate-sized flock of birds, or the backyard poultryman who achieves his life-long ambition of owning a small place and keeping a few hundred hens, there is sure to be a continuing market for his products if he produces superior poultry and eggs. At the same time he has provided for his old age with foresight and sagacity. He has a job that will provide him with steady employment and return a modest income. But perhaps best of all he has a certain financial security and independence that is peculiarly valued by elderly people. Properly conducted, a small poultry plant is good old-age insurance.

Vermont T. FOSTER

Contents

Chapter I	Poultry Culture as a Business Opportunity
Chapter II	The Ideal Poultry Plant
Chapter III	"Scientific Management" of the Poultry Plant---Why Not?
Chapter IV	Wanted---A Poultryman With Ten Hands and Ten Feet
Chapter V	Master the Unit of Operation
Chapter VI	The "Full Capacity" Plant
Chapter VII	A Two-Hundred-Hen Plant on Every Farm
Chapter VIII	Day-Old Chicks Commercialized
Chapter IX	Fowl Diseases
Chapter X	Midsummer Problems and Perplexities
Chapter XI	Advantages and Disadvantages of a New Breed
Chapter XII	The Poultry Show---A Dynamo of Inspiration
Chapter XIII	Visit the Down-to-Date Plant
Chapter XIV	Selection and Care of Breeding Stock
Chapter XV	Mid-Winter Points of Prime Importance
Chapter XVI	Fertility and Hatchability of Eggs
Chapter XVII	The Sitting Hen and Her Brood
Chapter XVIII	Brooding Chicks in Close Confinement
Chapter XIX	The Poultryman Gardener
Chapter XX	The Poultryman's Side Lines
Chapter XXI	Lowering The Death Rate
Chapter XXII	Fifteen Acres and Up



WHITE WYANDOTTES

White Wyandottes

The White Wyandotte, a fowl of American origin, is a leader among the general purpose kinds. It is also a prime favorite among breeders of exhibition poultry. White Wyandottes dress off nicely at any age, and the females are persistent layers of brown-shelled eggs. The ideal specimen is a bird of curves, and is most beautiful. The plumage is snowy white throughout. Shanks, toes and bill are yellow; eyes, bay; comb, face and wattles, red.

AN EXCEEDINGLY POPULAR GENERAL PURPOSE BREED

The White Wyandotte ranks very high in popularity. Few if any other general purpose breeds are so widely bred. It appeals alike to the fancier and the commercial poultryman, and the fact that it steadily retains its hold upon both classes is convincing evidence of its merit.

All of the members of the Wyandotte family originated in America. The first to appear was the good old Silver-Laced variety, which resulted from a mixture of Sebright, Buff Cochin, Hamburg and Dark Brahma blood. From this variety the White Wyandotte came as a "sport." Thus the latter contains no additional foreign blood, which may be regarded as a point in its favor.

The Wyandotte has aptly been described as a bird of curves. Every section should show beautifully curved contours, giving the whole specimen a round appearance. In breed characteristics the variety under discussion stands at the head, having been brought to this perfection through the intelligent work of an unusually able body of fanciers. It is today a marvel of type and color, as well as uniformity of show specimens.

That the extremely short-backed type of Wyandotte is most beautiful in appearance, no one can deny. However, there is a feeling that this beauty may have been secured at the sacrifice of laying ability, and that this is certain to prove injurious to the breed. Many practical men maintain that the best layers among the Wyandottes are the long-bodied birds, and are urging that specimens of the latter type be regarded as the ideal. That this contention contains much truth is indicated by the results secured at the various official laying competitions now under way in America. White Wyandottes have been making some remarkable records, but in virtually every case these are long-bodied birds with ample room for digestive and egg-producing organs.

Ideal White Wyandottes should weigh as follows: cocks, 8½ pounds; cockerels, 7½ pounds; hens, 6½ pounds; pullets, 5½ pounds.

The white variety should have pure white plumage in every section. Brassiness or creaminess is most objectionable. The neat rose comb, face and wattles should be red; eye, bay; bill, shanks and toes, rich yellow.

It will be observed that the body shape is such as to insure nice table carcasses. Add to this the yellow skin and shanks, and we see why so many raisers of table poultry prefer this variety. The proved ability of the hens as layers of great numbers of brown eggs, their dependability as sitters and mothers, their docility and hardiness, all make a business combination which is hard to beat. It is safe to say that the White Wyandotte will increase in popularity as its genuine merit warrants.

Chapter I

Poultry Culture as a Business Opportunity

"The world is not so much in need of informing as of reminding."

THE BOOM in poultry culture has been on for a quarter of a century. Instead of growing smaller it is multiplying in a geometrical ratio. A few years ago it was not thot of as a business in itself. The men who raised poultry on a large scale in America could be numbered on your fingers. Today they are numbered by thousands. There can be no question that we are barely touching the fringe of the possibilities of this intensely interesting calling. A few daring men have been venturing along the borders while the vast interior of the continent is yet to be explored and exploited.

Do you doubt what I say? Look up the records. Study the business from the point of view of a man of practical affairs. You will be convinced that there is no limit to the future demands for poultry products, and that as a delightful and promising occupation the breeding of all kinds of fowls should be ranked among the first.

There are a few things that can be accepted without much argument. Wheat will never go out of date in a civilized country. No one will question the truth of this statement. Wheat will be just as much in demand in America a hundred years from today as it is now. It is a staple product. The people will always need it and therefore the farmer will always raise it. The same might be said of several others of the staple products. They are practically essential to our existence. We would as soon think of dispensing with air and water. We will not give them up till we are compelled to by their scarcity and hence a prohibitive price on them.

The same is true with poultry products. The only reason why ten fold more of these products is not used by the people is the fact that they are not raised in sufficient quantities to bring them easily within reach of the common purse. Ask yourself about the matter. Why did not you eat more eggs and chicken potpie last year? It was because eggs were from seven to eight cents apiece, and poultry meat was equally out of your reach.

If you are rich the case is different. But the man with less than fifty thousand dollars in the bank is not going to buy many eggs at eighty cents a dozen. Put them within his reach, however, and every common laborer will have the beautiful ovals on his table in some form every day and a juicy rooster every time he can persuade his wife to cook it.

The tendency is altogether toward enlargement in the poultry business. The day when beef cattle were herded by hundreds of thousands on the western plains has passed away. The great pasture lands of the middle West are rapidly being taken up for strictly agricultural purposes, and the breeding of cattle for meat is growing less. The soaring prices of beef and pork during the last few years is a loud and certain prophecy of the immense increase in the culture of fowls to take the place of cattle and hogs.

At least something must be done to provide the people with meat—and nothing is more certain to take the place of the larger animals than poultry and eggs. While the supply of meat is growing less the population is immensely increasing, and the people are more and more massing themselves in the larger cities and towns. About sixteen millions of people were added to our nation, exclusive of Alaska and our island possessions, during the first ten years of this twentieth century. During the last 40 or 50 years the proportion of people living in large towns and great cities has increased rapidly and very noticeably. In 1890, 36 per cent of the entire population of the United States lived in cities. Ten years later the percentage had increased to 40. In 1910 it had reached 46. Today more people live in cities than in the country.

The markets for every kind of poultry product within reach of the great cities are practically inexhaustible. Within a radius of 25 miles from City Hall, New York City, there are some 7,500,000 consumers who produce practically no part of their food. Like conditions only on a somewhat smaller scale may be found at hundreds of centers of industry and commerce all over the country. So it will continue to be more and more as the nation develops. The man who gets in on the "ground floor" in this great new industry of poultry culture will be sure of a good thing in proportion as he proves himself equal to a great business opportunity.

Poultry culture is a calling of high character. It demands the best there is in a business man. He will have a chance to show how big things he can do and how successfully he can do them. It is an occupation that is peculiarly fascinating. It appeals to one's fancy as few other callings do. There grows up an immense enthusiasm which keeps one at the highest point of pleasure and anticipation. There is something about a beautiful bird that appeals tremendously to the artistic sensibilities. The ease with which ten individuals can be multiplied to a hundred also multiplies one's zeal and delight in the same ratio.

There is an inspiration, too, in the exhibition and

advertisement of fine fowls that keeps a man filled with unbounded interest all thru the year. The business can be enlarged rapidly as one has room and a sufficient degree of success to warrant it. It is marvelous how great a business in poultry culture can be carried on on a comparatively small plot of ground. The "intensive" principle can be applied here as successfully as in any other line. There is abundant opportunity to exercise all the ability one has as a "captain of industry."

A man said to me rather disparagingly, "I would rather breed larger animals." This idea is a mere remnant of the old contempt that people had for the raising of chickens. There is almost none of that feeling remaining at this time. No one needs to blush when he speaks of his poultry yards. Nearly everybody is more or less interested now in the breeding of nice fowls.

There was a time when farming was looked down upon as beneath the dignity of the best people. But farming has now taken its place among the noblest and most dignified callings of mankind. The university that does not give a course in Agriculture has a decidedly defective curriculum. Most of our colleges are giving courses in Agirculture, and even the public schools are teaching it. It has been lifted to the rank of a science during the last two decades.

Poultry Culture is moving rapidly along the same lines and to the same high standing before the people. Experiment stations are established at various points all over the United States and bulletins are sent out discussing from the scientific point of view every phase of the poultry industry. It is taking its place among the great scientifically conducted industries of the nation and of the world. The awakened interest in this calling is shown in the fact that there are international gatherings for its discussion and promotion. Some of the foremost scientific men of the civilized world are devoting much time to the subject.

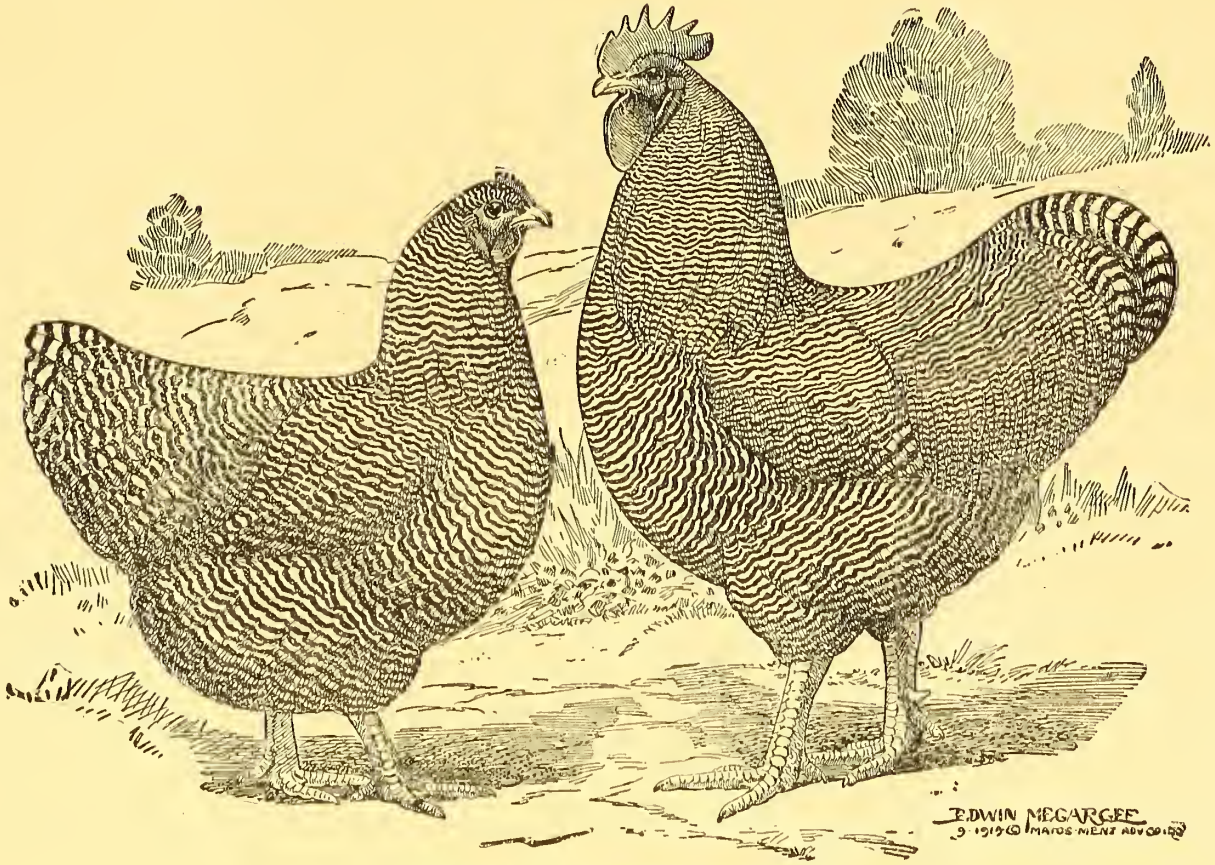
Poultry plants on a large scale, handling thousands of laying fowls, and having a capacity for producing fabulous numbers of young stock every year, prove again the growing interest in this new business. They prove also the marvelous possibilities of it as a profit-producing occupation. Abnormal conditions during the world war interfered seriously with poultry keeping as with hundreds of other callings; but the future promises larger things than ever before for American poultrymen.

In the far West there are entire towns of considerable size that are devoted exclusively to poultry culture. Petaluma in California is a conspicuous example of this. The man who rides thru New Jersey in any direction cannot but be deeply impressed by the many extensive poultry plants that will catch his eye as he looks from the car window. The same is true, only in somewhat less degree, all over the country. In fact the most extensive and productive poultry zone is in the Middle West,—tho there are other more intensive centers, Vineland, N. J., being the big Eastern Mecca.

The census of 1919 shows that cattle in America decreased on the farms 6,000,000 during the ten preceding years. In the same length of time the number of chickens increased some 250,000,000,—while the value of chickens during the same decade increased about $60,000,000. These figures surely show the certain drift of things toward the greatly extended development of this new industry. The average production of only eighty eggs for each laying hen per year also indicates the tremendous possibilities of improving the business along this line. Twice eighty eggs per year is not now accounted an extraordinary number for a hen to lay. There are plenty of individuals that are laying from 200 to 250 eggs in twelve consecutive months.

If here isn't a mine of large possibilities to develop, where will you find one?

Any man who has a small farm can in one season build up trade of considerable importance without interfering seriously with his other farm operations. This in fact, I count the ideal way to begin the poultry business on an extensive scale. A man is sure of his living from the farm crops, while at the same time he can be enlarging his poultry plant and improving his stock. He is thus avoiding the peril of depending exclusively upon his poultry and eggs from the start—a business error that has sent many a man to failure.



BARRED PLYMOUTH ROCKS

Barred Plymouth Rocks

The Barred Plymouth Rock is a strictly American product. It is one of the very best general purpose fowls and when properly bred is strikingly beautiful. The plumage is evenly barred, black and white. Comb, face and wattles are red; bill, shanks and toes yellow. The hens produce brown-shelled eggs in goodly numbers. Barred Rock chicks are noted for their vigor and rapid growth.

A FAVORITE AMERICAN BREED

The Barred Plymouth Rock, a general purpose fowl of unusual beauty and great utility value, was the first of the strictly American breeds to secure general popularity. Though many years have elapsed since it was first introduced, it is still regarded as one of our best business fowls and, in addition, is the idol of a large and influential group of fanciers. Among the latter are some of the foremost American poultrymen, who have bred this grand fowl for a long period of time, preferring it to other breeds and varieties which have been introduced more recently. So much controversy has been waged over the origin of the Barred Plymouth Rock that the various claims cannot be satisfactorily discussed in a short article of this nature. It is enough to say that in all probability it was produced by crossing American Dominique males with Black Java females and mating the best of the offspring of this cross back with selected Dominiques. This process was persisted in until the breed type and markings were well fixed.

This grand fowl is one of the most widely bred of the many strictly American varieties. It stands in the front rank of popular favor, its chief rivals being its descendant, the White Rock, and the White Wyandotte and Rhode Island Red. The problem of producing exhibition birds of this variety having the proper type and the correct color pattern is a nice one, and it seems to exert a peculiar fascination over those who have taken this variety up. The Barred Rock classes at the big poultry shows are always large in size and high in quality. The price paid for superior specimens in the show room is often very high, and there is a ready sale for good stock at all times.

The accompanying drawing gives a correct idea of the standard Plymouth Rock type, as well as the desired plumage markings. The barring should be narrow, the black and white being evenly barred and as uniform as possible throughout the entire plumage. Eyes, comb, face, wattles and ear lobes are red, while the beak and shanks are yellow. The skin is also rich yellow, the color demanded by our best markets.

A typical fowl of this variety should be large and upstanding, with plenty of bone to support its weight. The desired weights are: cock, 9½ pounds; cockerel, 8 pounds; hen, 7½ pounds; pullet, 6 pounds.

Barred Plymouth Rocks are excellent table fowls, and the hens are good layers of brown-shelled eggs. The chicks are particularly hardy, are easily reared and quickly reach maturity.

Possibly the worst objection to this variety lies in the fact that in order to produce males and females which will properly match for exhibition one must resort to double mating. While it is true that there are some fanciers who have produced very fine specimens of both sexes from single matings, this method is attended with such difficulties that the shorter and easier one, double mating, is generally resorted to. American poultrymen may well be proud of their success in producing and perfecting this grand breed, which is today extensively bred in all parts of the world.

Barred Rocks Dick Grahams favorite
They will lay 70% while running on green grass & fed a good ration they like
say Dick Graham - Old time poultryman and Professor of Ontario Canada
experimental farm

Chapter II

The Ideal Poultry Plant

"Art is true art when art to God is true
And only then.—" —*Maurice F. Egan*

VISION IS the great need in any calling. The man who is searching for Ideals is on the way to victory. Vision, with the ability to transform it into verity, will make any man successful.

It is well therefore to get a picture of the **Ideal Poultry Plant** clearly in mind.

I. Size of The Plant

Size, extent, capacity must be considered first of all. The amount of business done must be largely dependent on the extent of ground occupied. However much the "intensive" principle is practiced we soon get where the space is limited.

The "backyard" plant must necessarily be somewhat confined in its possibilities. On five acres a very successful one-man business can be conducted with a capacity of 2,000 laying hens. Comparatively little can be expected from the soil for the support of the family. However, much can be drawn from a five-acre place for the feeding and care of the fowls.

With wise and very systematic arrangements an abundance of range can also be furnished the stock. More acres must be added as a larger business is desired.

II. Convenience To Markets

The question of markets is an important point. The larger half of any business is the marketing of the product. What value is it to a man to produce an enormous quantity of any kind of merchandise if he can't dispose of it with convenience and advantage?

A man might produce ten million eggs, or a hundred million, but if there are no markets at hand, or within reasonable distance, his very success might prove his financial failure.

In locating the ideal plant therefore this matter of market conveniences must enter as one of the prime factors. It will be at the front from two to three times if not oftener every week of the year after the business gets under way. Inaccessibility to the best markets will prove a daily and most serious hindrance to success, an everlasting and an always increasing source of annoyance and discouragement.

There are markets without measure. No man need want in this respect. The great city is within easy range of thousands of the most desirable locations for the ideal plant,—and the "great city" is above all things the most desirable market for everything that the poultryman may produce.

Let the location be therefore not too far from some great center of population.

Nearness to a railroad shipping point is almost equally important,—in many cases even more important. The man who must drive from five to ten miles to reach his shipping station will be at a constant disadvantage, both in marketing his product and in securing the large quantities of stuff that he will be compelled to purchase from distant houses.

Reasonable nearness to some important center of population, and the least possible distance from a good railroad shipping point, should therefore be insisted upon at the very beginning.

III. Arrangement Of Houses

It is a well established principle that a poultry business should be begun on a comparatively small scale. Nine-tenths of the failures may be accounted for at just this point. Many men know very little about the work when they begin the construction of a plant.

Plans should be begun with much caution, with a forward look thru a number of years. A scheme should be drawn with careful regard to the saving of time and labor in the care of the stock, and with a view to any desirable enlargement of the plant as the enterprise develops.

In visiting and studying the arrangements of a plant in New Jersey I was struck with the convenience with which one could pass from one part of the business to any other. The incubator cellar stood within fifteen yards of the dwelling house. The brooder house stood about equally distant from the dwelling house and the incubator cellar at another angle from the kitchen door. From ten to fifteen yards further away the breeding house and the laying house were lined up. Any part of these buildings could be reached at any hour of the day or night within two minutes from the residence of the poultryman.

It is a very grave mistake to put the poultry plant off in some distant field. With our present knowledge of the best methods of poultry culture there should be no unpleasant odors about the poultry plant however near it may be to the living quarters. The poultry plant is unlike a dairy barn or a horse stable in this respect. But there is need of caution against getting the buildings so near to one another and to the dwelling house as to make them mutually a nuisance to one another.

The subject of the arrangement of the houses has specially to do with the saving of time and labor in the

constant passing of the poultryman from one part of the plant to another.

IV. Poultry Houses

(1) The Incubator Cellar

An incubator manufacturer wrote me as follows in answer to a special inquiry as to his ideas with regard to the best kind of an incubator cellar:—"We have hatched thousands of chicks in incubator houses built on top of the ground but we believe that as a rule, better average results are secured, and with less attention, when the incubators are located in a suitable house cellar, or in an incubator room, the floor of which is from three to four feet below the ground level, with a foot or two of dirt thrown up against the side walls. A building for this purpose should have a ceiling from 7½ to 8½ feet high, according to the number of incubators to be operated in the house. The space between ceiling and roof can be used to good advantage for storage purposes."

Such a building is to be ventilated by at least one flue to every 100 square feet of floor space, the flues reaching within seven inches of the floor and to be about eight inches in diameter. The window sills should be about 5½ feet above the floor level. Top ventilation should be provided thru the windows, and the ventilation should be easily controlled by adjustable dampers as of a stove pipe.

Another Incubator Company wrote me as follows in answer to a like inquiry:—"The ideal incubator cellar is constructed of brick, tile, or concrete, the materials being equally efficient so far as our experience can determine. The excavation should not be deep, and the earth should be embanked around the walls, so permitting the cellar, so called, to extend above ground rather than under ground, at the same time obtaining the cellar effect by so embanking the earth. As a result of this location, ventilation is easier to obtain."

This high authority also recommends the two-story building, as the second story tends greatly to equalize the temperature of the cellar room both winter and summer.

The incubator cellar thus described by these two companies with such almost exact agreement is without doubt the best thing of the kind that we know of at this time. The building can be so constructed as to admit of enlargement lengthwise as the business increases.

I inspected an incubator cellar recently that was built almost exactly after these instructions. The structure was twenty by sixty feet. The cellar bottom was four feet below the surface of the ground and the ceiling was eight feet high. In this room there were two Newtown "Giants" with a total capacity of 13,200 eggs.

(2) The Brooder House

During the last ten or fifteen years there have been great changes in brooding methods. Wonderful progress has been made along the lines of saving labor. This is of the highest importance where poultry culture is to be conducted on a large scale.

When only small flocks are to be reared, say from 50 to 500 the brooders on sale at the poultry supply houses will do very well. But the swing now everywhere appears to be toward the "Colony Brooder."

Various makes are on the markets. On the New Jersey farm mentioned above the brooder house is 14 feet wide and 28 feet long. It is divided at the center, making two rooms each 14 feet square.

In the rear apartment the brooder stove is located in the center of the room. This small house has a capacity, with one stove, of 1500 chicks. The proprietor told me that he ran 4,500 chicks thru that little building in one year with a loss of only six per cent. He uses the coal burner, tho he makes little difference between this and an oil burner. The principle is the same, different persons under different conditions preferring the one or the other.

These colony stoves are made in three different sizes , the smallest having a capacity of from three hundred to four hundred chicks. Prices of the different sizes have ranged in normal times from $18 to $35.

The old system of brooding small flocks under small hovers seems to have little chance of winning out in competition with this new form of colony brooding where large numbers of chicks are being raised. The saving in time and labor and care, and in the solution of perplexing problems, is very great. In defence of the stove, too, it is claimed that all the chicks have an equal chance far more than in the other systems.

In the stove room of the brooder house the little birds are fed in light litter with hopper feed provided as they desire it. When they have grown strong enough to permit it, the door into the front room is thrown open and the space over which they can roam is doubled. Ventilation is secured by an opening on each side near the lower sill. Thru these openings fresh air is passed in thru pipes properly adjusted to avoid a draft. The bad air escapes thru a flue at the ceiling. The stove room is boarded above, thus leaving an air space between the ceiling and the roof.

(3) The Laying House

In the ideal plant the modern principle is along extensive lines. That is, there is everywhere a departure observed from the small flock in the small pen toward the large flock in the large pen.

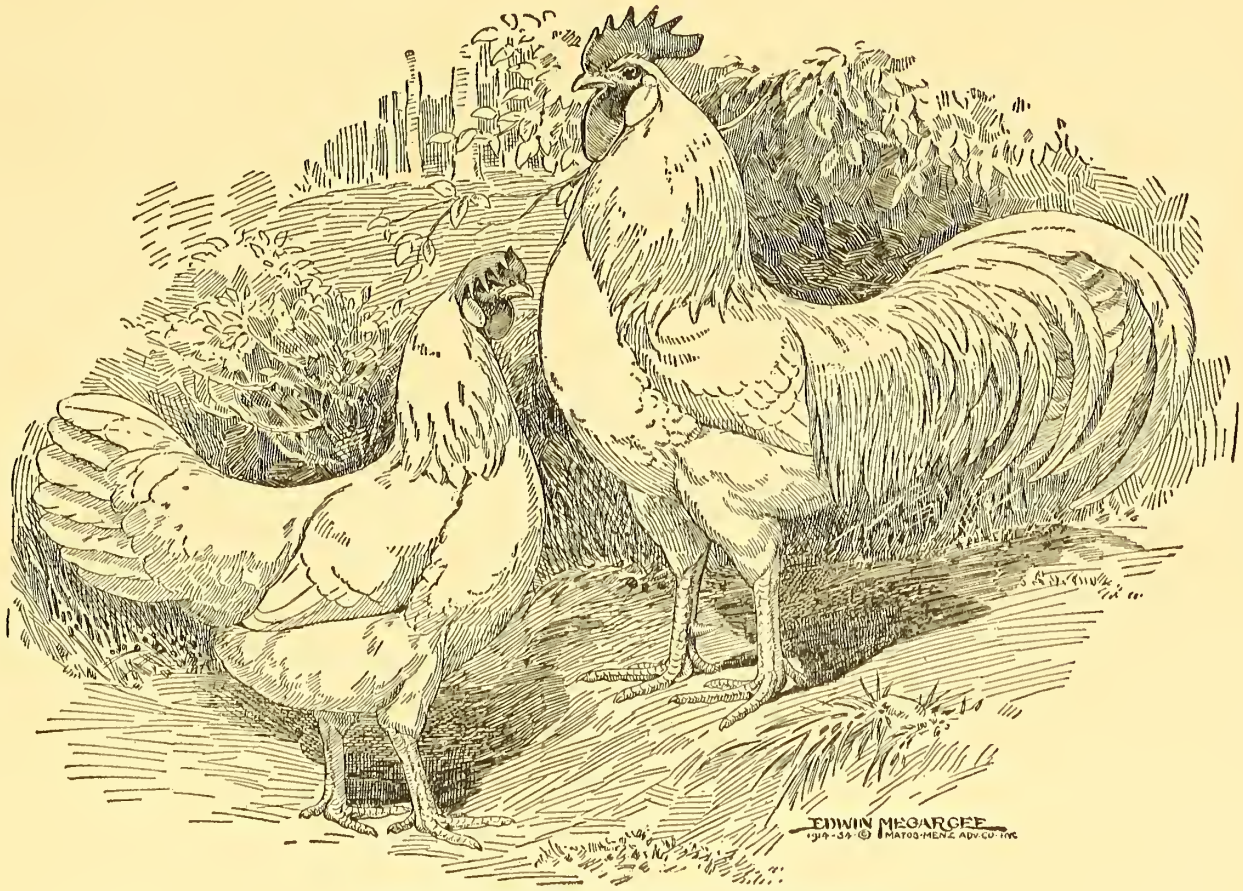
Of course where small numbers of fowls are kept the laying house is correspondingly small. But where a large business is attempted hundreds of fowls are permitted to run together thru a long house. In the extensive plants the flocks run usually from 250 to 500 each tho I have found flocks of 750 each or more.

The laying house most in favor is from 15 to 20 feet wide. Partitions occur at about every 20 feet. The house may be as long as desired, beginning with the one unit. There is no doubt, however, that the smaller flock principle is the safer ground, especially for the man who is not financially able to take many risks.

The same is true in brooding operations. The novice especially should move along safe lines until he is absolutely sure that he is able to cope with all the problems arising in the care of a large colony of birds in the same room.

(4) The Colony House and Field

The ideal location for the colony house for maturing young stock on free range, is in the midst of a field of alfalfa. The crop is harvested in the early summer and this first gathering is preserved for winter use. The young stock is immediately turned into the mowed field, and as the tender alfalfa leaves grow they are eagerly devoured by the hungry chicks. This range feed, together with proper hopper feeding, makes an ideal environment for the building up of healthy and vigorous stock. A few such houses, cheaply made, will accommodate a large number of youngsters. Such a field is one of the most desirable parts of the **"Ideal Poultry Plant."**



SINGLE COMB WHITE LEGHORNS

Single Comb White Leghorns

The White Leghorn combines beauty and utility value to an unusual degree and is, therefore, one of the most popular varieties of domestic fowls. It is of medium size, hardy, quick-maturing and a most prolific producer of large, white-shelled eggs. The hens are non-sitters. In color, both sexes are alike. The plumage is pure white throughout. Bill, shanks and toes are yellow; eyes, face, comb and wattles, red; ear lobes, white. The desired type is shown herewith. Standard weights: cock, 5½ pounds; cockerel, 4½ pounds; hen, 4 pounds; pullet, 3½ pounds.

THE POPULAR EGG MACHINE

The Single Comb White Leghorn enjoys wonderful popularity, and is probably more widely bred than any other single variety of domestic poultry. This high place in the poultry world is well deserved, because this variety is not only beautiful, but is one of the heaviest layers in the whole list of breeds. In activity, hardiness and its ability to "rustle" it is unexcelled.

Many breeders of the White Leghorn claim for it the title, "world's champion layer." This sweeping assertion may be questioned at times by the admirers of other breds, but it cannot be disputed that the dainty Leghorn has made some wonderful records. Further, the eggs are pure white in color, large in size and uniform in shape. Thus they bring highest prices in select white-egg markets.

The exhibition type of the S. C. White Leghorn is wondrously beautiful. As will be noted in the illustration, the comb of the male is rather low, with a long blade and five clean-cut, regular points. It should not follow the shape of the neck, as this is considered a defect. The female's comb is similar in shape, but falls over to one side. The wattles are long and thin, well-rounded and free from wrinkles. Ear lobes are almond shaped, smooth and close fitting.

The long, slender neck is nicely arched; the breast full and round, carried well forward. The large tail is well spread, and in the case of the male is decorated with a profusion of long sickles and coverts. As a true Leghorn "shows plenty of daylight under him," the thighs and shanks should be long and clean cut.

In color, the sexes are alike. Eyes, comb, wattles and face are red; ear lobes, white; beak, shanks and toes, yellow. The plumage is pure white in all sections, white to the skin. Brassiness—a yellow tinge on the surface plumage— or any foreign color are to be religiously avoided.

Both as an exhibition and utility fowl the S. C. White Leghorn makes good. The White Leghorn classes are always large at the great poultry shows, and since competition is keen, good prices are paid for superior specimens. On the general farm or exclusive poultry plant it is exceedingly popular because of its ability to deliver large quantities of eggs during all seasons of the year. Few if any other breeds are as generally profitable and satisfactory.

Chapter III

"Scientific Management" of the Poultry Plant---Why Not?

"In science you must not talk before you know; in art you must not talk before you do; in literature you must not talk before you think." —*Ruskin.*

I HAVE referred briefly to this subject in another place; but it is worthy of a more extended survey. A new slogan is ringing thru the business world—"Scientific Management." What is it?

Dr. Frederick W. Taylor, the originator of the system, says that it means knowing just what you want done, and then doing it, in the best and the cheapest way. Theodore Roosevelt said that Scientific Management is the application of the conservation Principle to production. Some one else has said that the basis of Scientific Management is "the rigorous cutting away of superfluities—not one wasted motion, not one wasted minute."

As applied to shop management, it means the mastering of all available knowledge concerning the work to be done. This knowledge is to be used in the most effective way possible in the doing of the work. It means also increasing this knowledge to the farthest degree possible by investigation and experiment.

Scientific Management as studied and practiced now in the great productive industries gets down to the smallest details—the motions of the workmen, "division of labor," "task" study—that is, the study of the amount of time required to do a certain piece of work of prescribed quality—the standardization of methods and tools and devices—that is, the classification of these things according to their scientifically established utility.

This new system of management, in fact, neglects nothing as trivial, but searches relentlessly for the greatest possible efficiency in every detail of the business.

Why should not the principles of this system be applied to this great twentieth century productive business of poultry culture? The supreme need in the average poultry plant to-day is "the rigorous cutting away of superfluities—not one wasted motion, not one wasted minute." Just this is Scientific Management.

Now for its application on the poultry plant.

1. Human Efficiency

A few years ago the man who cared for 500 fowls was accounted a fully employed man. The rule was that not more than 15 fowls should be kept in an enclosure during the winter season, and that the room should be at least 12 feet square. This made some 33 pens of fowls, besides the many other necessary "pens" and cages for the accommodation of sick fowls, broody hens, unused males, etc.

It is evident that poultrymen have been studying "Scientific Management," tho they have not called it by that name.

Some time ago I visited a great plant where one small salaried workman has the exclusive care of 3,500 hens except the gathering of the eggs. These hens were kept in seven different houses, 500 in each house, every bird having the run of the whole place. Compare such a system with the most highly developed "systems" twenty years ago! This will suggest what progress has been made in Scientific Management among poultrymen. It will also suggest what progress is yet possible to be made, for as our fathers were fooled in thinking they had spoken the last word in poultry culture, so we are greatly fooled if we think we have spoken the last word.

There are few born managers. These few forge to the top in whatever business they may be engaged. But every manager of a poultry plant, whatever his "born" abilities, may multiply himself by himself several times by a careful and practical study of human efficiency.

(1) Speed

Speed is one of the big things in the doing of work. "Scientific Management" makes "Time Study" its great fundamental principle. Under this head "Motion Study" comes in for a very prominent place. This is the science of avoiding all waste of time in the motions men have to make in the performance of work. Since time is cash to every successful poultryman the importance of this can be seen at a glance.

What a wide field there is in the average poultry plant for the study of this subject of Speed! How to feed several thousand fowls with the greatest possible dispatch,—how to water them in the least number of minutes,—how to gather their eggs with the fewest motions,—how to care properly for several thousand young chicks with the fewest possible movements of hands and body—and so on without end:—these are the questions that must be answered to a scientific certainty before the poultry business can take its place where it belongs. The man who cares for hens by hundreds of thousands needs to become "fingerwise" as well as the man who plays the piano, or he will not be able to pound much harmony out of his business.

(2) Health

Under Scientific Management the health of the worker must be kept constantly in mind. "Speed" must not be attained at the sacrifice of health. "How much can a man do, and how quickly can he do it, without loss of physical and mental efficiency?" This question is scientifically investigated, and the workmen are given their "tasks" accordingly.

The poultryman may get great help here. The man who undertakes to do more than he can **endure** faces certain failure.

A poultry keeper told me sometime ago that he has to live on his job almost day and night. Here is where Scientific Management must be applied as in other forms of production. Human efficiency is at its worst when health of the worker is threatened. He who tries to do too much will soon be where he can do nothing. This is worse than mere financial bankruptcy.

(3) Quality of Work

Of course quality of work is the final test in the "Standardization" of a workman in any industrial plant under Scientific Management. The man who can't produce the right quality of work must be marked in a low standard and the more thoro and skillful workman must take his place. Every man is studied scientifically by the "Functional Foreman" and must take his place as to the quality of work he produces.

Here after all is "Human Efficiency" in its most important aspect. Thoroness can never be omitted from any work that is to command respect. On the poultry plant this principle must not be lost sigh of for a single moment. From the floor litter to the "blue ribboner" in the showroom, "A—No. 1" must be the standard. Nothing else can suffice.

The scientific study of this phase of the work is just as essential to the poultryman as to the manufacturer.

II. Mechanical Efficiency

Under Scientific Management every tool from the hand shovel up to the most powerful and complicated engines of production, is studied scientifically and classified or standardized as to its utility in comparison with other tools.

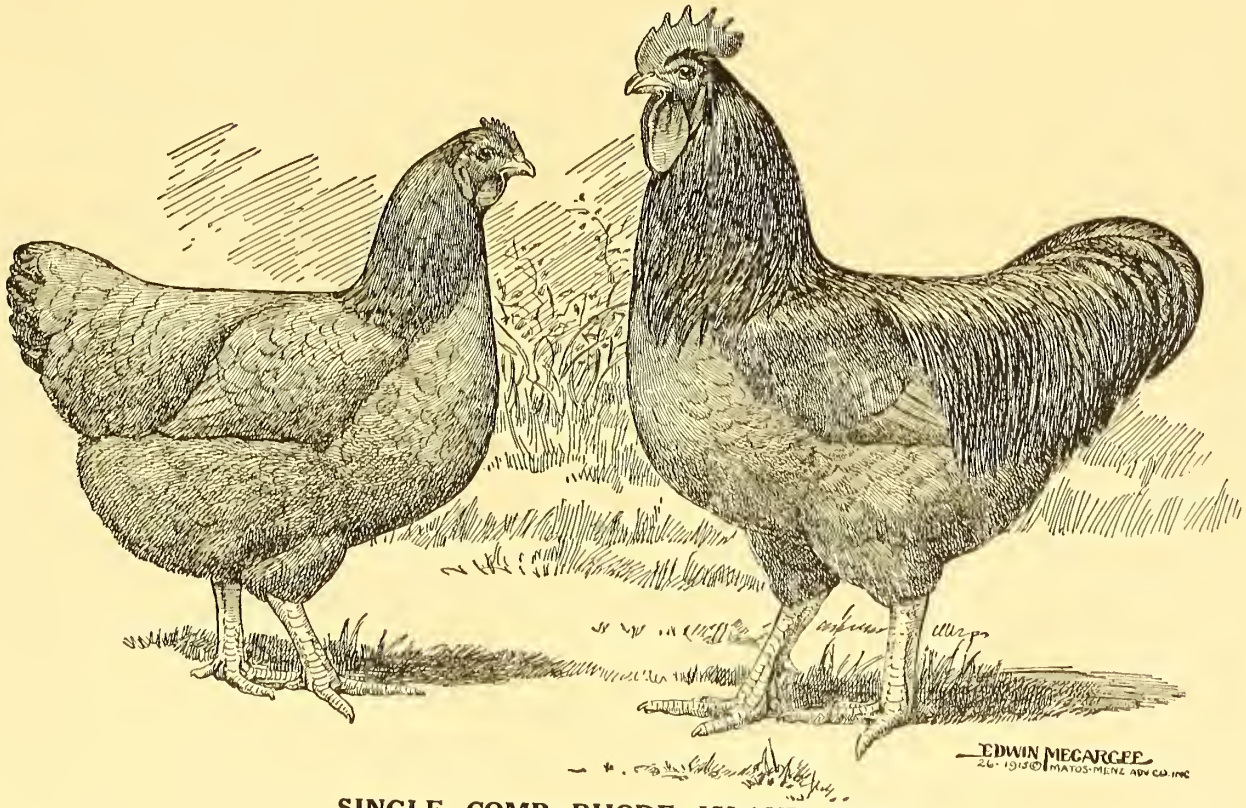
A shovel in the hands of a workman must be able to carry, say, 21½ pounds of material—otherwise its mechanical efficiency will be less than it should be. This principle is carried to the utmost detail into every department of the business.

What a large opportunity there is for the application of this method in the amazingly complicated detail work of the poultry plant! Machinery is coming to the front in this business by tremendous strides. It is the saving and the making of the industry. The man who does not study with the exactness of scientific investigation the myriad of mechanical contrivances now on the markets as helps to the modern poultryman will certainly become a straggler in the rear.

There will be plenty of men who will laugh at such talk as this and say it isn't practical. But while they are laughing, the men who are applying the principles of Scientific Management will be forging ahead.

The poultry business is a **productive occupation.** It involves the study of detail work ten fold more than the dairy business. Where a dairyman cares for one cow, the poultryman must care for a hundred birds. The dairyman may dump his milk roughly into a large can and ship it by the ton with no fear of its getting "broken;" but the poultryman must handle his eggs one by one "with care,"—unless some better method is discovered.

Contrast the production of a thousand young chicks with the production of the number of calves or swine that would be equal in value. Failure in poultry culture in hundreds of cases has resulted from a lack of scientific planning and scientific practicing in the handling of ten thousand varying details where the business is undertaken on a large scale. When we get where we can solve the problems of waste in time, feed, space, hatching, brooding, marketing and purchasing and in scores of other things—when we can plan with more exactness, and carry out our plans with greatest possible efficiency—then will we really come to our own, but, not until then.



SINGLE COMB RHODE ISLAND REDS

Single Comb Rhode Island Reds

Rhode Island Reds first attracted attention about the year 1900, when a small group of poultrymen took up and exploited them. For half a century prior to the above date these birds had been commonly bred by egg-farmers located in the southern part of Rhode Island, being locally popular because of their hardiness and egg-producing ability. Today the Rhode Island Red occupies a position among the most popular breeds due both to its beauty and its business qualities. The color is rich, mahogany red, with a small amount of black. Standard weights: cock, 8½ pounds; cockerel, 7½ pounds; hen, 6½ pounds; pullet, 5 pounds.

"MADE IN RHODE ISLAND"

The foundation of the breed of general-purpose fowls, now known as the Rhode Island Reds, was laid by the farmers in the section of Rhode Island centering about Little Compton. These men were specialists in the production of market eggs—an industry which is still a most important one in this district—sending their products to Providence and Boston. They paid but scant attention to the form and color of their layers, but did insist upon having stock which was hardy and vigorous, and which would lay goodly numbers of large eggs having rich, brown shells.

There exists some doubt as regards the exact manner in which this breed was first produced. From such data as we have available, we judge the original crosses were made about the middle of the last century by Mr. William Tripp, a retired sea captain, who was devoting considerable attention to his fowls. He received a present of one or more Malays from a friend who had just made a voyage to Asia, where these birds were picked up. Mr. Tripp crossed these with the common fowls of the district, and probably with some of the other Asiatic breeds, probably the Buff Cochin.

Many of the resulting cockerels were brilliant red in color, so attractive in appearance that they were retained for breeding purposes and this unusual color persisted in succeeding generations.

It is said that these brilliant makes soon became popular in the district and were much sought after. For want of a better name they were commonly referred to as the "Bill Tripp fowls."

Apparently, little attention was paid to securing good color in the females, and the flocks were anything but uniform, the plumage of the hens ranging from straw color to muddy chocolate.

The first attempt to prepare a definite standard for the breed seems to have been made by Dr. A. A Brigham, then director of the Rhode Island Agricultural Experiment Station; I. K. Felch, the veteran poultry judge, and Professor F. H. Stoneburn. These men took up the matter in 1900 or 1901 and the standard made up by them was published by the station. Shortly thereafter a Rhode Island Red Club was formed, and this important duty was assumed by the new organization.

The popular shape of fowls of this breed is shown in the accompanying cut. The color is a rich, brilliant red, varying slightly in shade in various sections of the body. Black appears in wings and tails. The shanks are yellow; beak, reddish-horn; face, ear-lobes, comb and wattles, red.

As a hardy, hustling, profitable breed, the Reds are hard to beat. The hens are excellent layers, the chicks grow rapidly, and dress off well at all ages. The females are a bit inclined to broodiness at certain seasons, and are excellent setters and mothers.

Chapter IV

Wanted---A Poultryman With Ten Hands and Ten Feet

"Life, to be worthy of a rational being, must be always in progression."

WHEN THE "Chicago Limited" whirls you across the continent at the rate of seventy miles an hour it multiplies your legs by at least twenty. It is the machine that multiplies the man.

One man in a needle factory can grind to a point 100,000 needles in a day. It is the machine that makes ten fingers able to do the work of a thousand.

When a housewife sews a seam with a modern Singer she is blessed with at least fifteen times as many hands and fingers as her grandmother was able to use in her sewing. The machine transforms one housewife into seven.

The loudest limit of your lung power is multiplied by a hundred thousand the instant you step to the modern telephone. The machine has annihilated space, and brought you mouth to mouth with your friend a thousand miles away.

The modern mammoth printing press makes the two-handed man more than hundred-handed—and the machine gun adds hundreds of hands and fingers and feet to the common soldier who manipulates it.

Without the machine we would still be in the Dark Ages. That means we would still be contemporaries of any age from Socrates to Franklin. Organization and Machinery are what make the twentieth century so much more efficient than any other century since the creation of the world that it stands alone—in fact, in a large sense unrelated with any other age that has preceded it.

Efficiency today means a man plus horse power, steam power, electric power, and mechanical power in endless forms.

The question for every poultryman to answer first of all is, "Shall I live in the first century and fail, or in the twentieth century and succeed?" The first century calls for only two hands and two feet—the twentieth century calls for at least ten hands and ten feet to every man.

What are some of the most valuable labor-saving inventions in poultry culture? We can only refer to a few of them by way of suggestion.

One incubator company advertises hatching machines with capacities ranging from 1200 to 20,000 eggs! In such machines the poultrymen get their extra hands and feet. In proportion as they can avail themselves of the use of such machines they will be ready to enter with fair promise of success the powerful competition that is now on in big poultry business.

I see also the advertisement of the "Giant" Incubator—"Single and Double Decks." This suggests the "Sky-Scrapers" of our commercial nerve centers—city upon city—incubators upon incubators—the multiplication of hands and feet and the conservation of time and space. The claim of the company is that their giant incubator "automatically performs every important operation." As an illustration of this fact it states that "a simple turning of a handle at its end turns ten thousand eggs in a half minute." We have seen these wonderful machines work and know that the claims of the men who offer them for sale are not overdrawn.

Here then is the poultryman's "Chicago Limited," his thousand-foot ocean liner, his hundred-handed printing press, his thirty-mule reaper and binder, down-to-date.

But some one will object, "Such a machine costs money. I can't afford it." Well, the common farmer can't afford a thirty-mule reaper and binder. He could not use it if he had it. But wait! That common farmer will mortgage his farm to buy a two-mule reaper and binder—and every moment, if he is down-to-date, the bigger machines are included in his vision of the future. If he can't get a big giant he will get a little giant, and add a "deck" or two later.

It is the necessity of the times that I am talking about. It is the man "plus." The machine is the red blood corpuscle of this twentieth century business. He who misses this point will be out of joint with everything in the commercial and productive world. He will be an **anachronism**—which means here "anything occurring or existing out of its proper time."

The hen that broods sixteen chickens is doing a noble work. A larger brood will follow her at their peril. But the new brooding systems put from 100 to 1500 chicks under and around one single mechanical "hen"! It works, too. It is the same old principle—hands and feet multiplied by the inventive genius that is everywhere dominant today.

The twentieth century poultryman must get on this train or he will never get thru to a worth-while destination. There are no "flag stops." It is making a "limited run" on a thru schedule. It will wait for no man. If you are not already aboard you must make the leap even at some risk.

Given houses that are properly arranged and one

man will do the work that would require five men under the conditions still to be found in very pretentious poultry plants.

I visited a splendid farm not long ago and inspected a brooder house costing several thousand dollars. It had become useless because more modern arrangements had been installed, arrangements that saved the labor of four or five persons. It would be safe to say that the strictly down-to-date poultry houses make it possible for one man to do the work that would require four or five men in the best equipped buildings fifteen years ago.

Under the best labor-saving conditions today as we have seen, one man alone should be able to care, summer and winter for at least 2,000 laying hens—with some help during the hatching and brooding season.

Surely this means the multiplication of hands and feet. How is it? Can you do this job? If not, why not? Here may lie the crux of your business success. A layer that will not make a clear profit of $1.00 a year is a poor thing to have around. That is, two thousand layers ought to mean a profit of at least $2,000 a year. Such a work is without doubt easily possible with a properly installed labor-saving equipment. Without the right kind of houses and mechanical equipment it would be an impossibility.

A "hired man" would cost the poultryman from four hundred to six hundred dollars a year. If one man's labor can be saved by improved machinery and a more systematic and down-to-date equipment it will mean a big move forward with many a poultryman. If two men's labor can be saved in the same way, it ought to insure immediate financial success.

Along this line the new forms of litter advertised should be carefully investigated. Litter is a large factor in the winter care of poultry. The farmer-poultryman solves this problem easily—because of the great quantities of straw at his command. But the average man who keeps hens must buy his litter. There is a vast difference in the quality, cleanliness and staying powers of the various brands used.

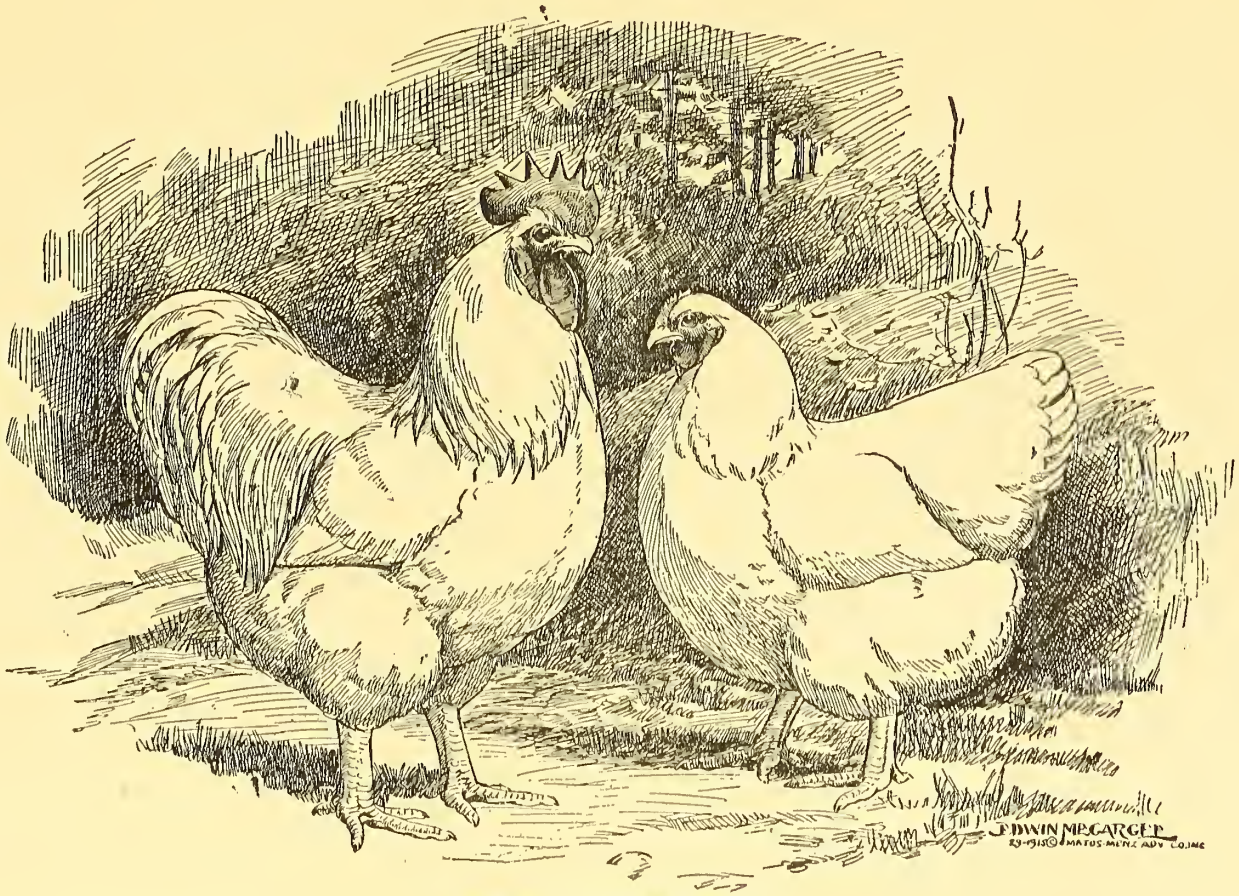
Convenience in the nesting and the roosting of the grown fowls may make a large difference in the amount of labor necessary in the care of the plant. Conditions ought to be such that the care-taker need not live on his job. Machinery and system mean not only the saving of labor, but the conservation of nerve force and sleep and peace of mind. And these labor-saving systems almost always mean the production of a higher quality of goods.

The automatic feeders, several of which are now before the public, have proved their practicability and should be investigated by each poultryman. Such feeders may be of very exceptional use in the saving of time and in the making of better fowls and more eggs.

It does not pay to sneer at the various "systems" that are described by the men who have used those systems and have made good with them. The inventor of some new thing first makes himself master of every contrivance of the kind that any other man has found out. The poultryman is an inventor. If he isn't he'll surely lack hands and feet to compete successfully in this wide awake and tremendously hustling age.

Much time and labor may be saved by purchasing the best thorobred fowls one can afford to get from the men who have produced the best by studying and laboring long years. In this way you may begin neck to neck with the foremost men of the poultry world. The man who misses this point will make a great mistake. He will be like one who desires to make the quickest possible trip around the world, and starts by the slow process of walking, hoping to invent an express train and an ocean liner according to his own ideals by the time he has gotten half way round! He will be like the great oculist, Wenzel, who had to confess that he spoiled his hat-full of eyes in learning how to operate for cataract!

It is a wise man who climbs upon the shoulders of the giants of the past and the present; for then he can see farther than the tallest of them.



WHITE ORPINGTONS

White Orpingtons are most excellent layers says M. L. Chapman an old time fancier who had stock from Mr. Lyle Orpington breeder

The Orpington is an English general purpose fowl, first produced in 1886, and generally introduced into America a few years later, after it had been brought to a fair degree of perfection. The white variety is pure white in plumage, with white or pinkish-white beak and shanks. The hens are very satisfactory producers of brown-shelled eggs, and stock of all ages makes excellent table poultry. The breed was originated by the late William Cook, who produced several distinct varieties.

ENGLISH GENERAL PURPOSE FOWL

The Orpington has earned its place among the staple business fowls of America. The true Orpington, regardless of variety, is a massive, blocky bird, short and stout in leg, large in body, rather loose in plumage. This combination causes it to appear heavier than it actually is. The standard weights are as follows: cocks, 10 pounds; hens, 8 pounds; cockerels, 8½ pounds; pullets, 7 pounds.

In color this white variety is pure white in all sections. This applies to web, fluff and quill of the feathers. Foreign color in any part of the plumage is an exhibition disqualification. A few years ago many White Orpingtons showed more or less brassiness, especially in the males. This defect has been largely eradicated through careful breeding.

Beak and shanks are white, or pinkish-white; eyes, reddish-bay; face and ear lobes, bright red. The skin is also white.

The Orpington shape is such that birds of this breed dress off beautifully for table use. The breast is long, full and round, with long, even breastbone; the body broad and deep; thighs, thick, stout and meaty. In texture and quality the flesh is most satisfactory. Of course, the white skin and shanks are not popular in our markets, but this prejudice in favor of yellow shanks and skin seems to be gradually disappearing.

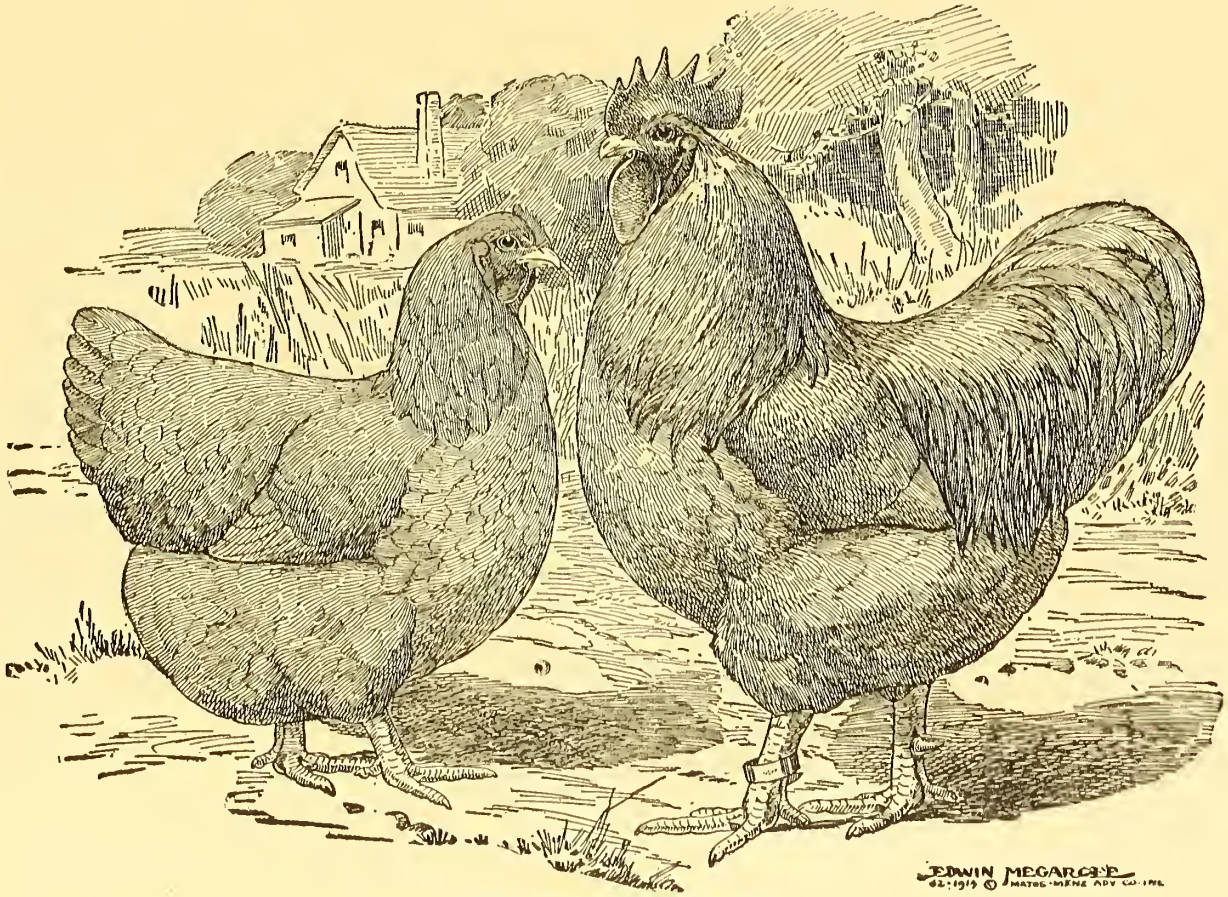
As layers, especially during the fall and winter months, Orpingtons give excellent satisfaction. Because of their thick coats they do not seem to be greatly affected by climatic changes or extreme cold. Their eggs do not average as large in size as those from certain other breeds, but they are well up to the weight demanded in our markets. They are brown-shelled.

Orpington chicks are usually hardy, and are not difficult to rear. Properly handled, they make very rapid growth.

The Orpington breed, in its several varieties, is a monument to the skill of a prominent English poultryman, the late William Cook, who resided at Orpington, Kent, England. It is not difficult to see where the breed got its name.

Mr. Cook first produced this new fowl some thirty years ago. The black variety was the first to appear, followed at short intervals by other varieties, as the new kind grew in popularity.

Some breeders hold that the white variety is a sport from the black. Many white varieties of other breeds have so originated. Others believe that Mr. Cook used entirely different blood, combining that of the Black Hamburg, White Leghorn and White Dorking. But whatever its ancestry, the subject of this sketch is a true orpington in shape and general characteristics. It is certainly deserving of the consideration of all classes of poultry keepers, whether operating a commercial plant, maintaining a back-yard flock or interested in breeding show stock.



BUFF ORPINGTONS

Buff Orpingtons

This fine general purpose fowl was produced in England and brought to public attention in 1894. After its introduction to America, it rapidly became very popular and it has demonstrated its right to be classed among the business breeds. The color is rich buff in all sections. For the production of brown eggs the breed is very satisfactory on the average, and some individuals have made wonderful records.

AN ENGLISH GENERAL PURPOSE FOWL

To the veteran English poultryman, the late Wm. Cook, is given credit for the production of the Orpington breed of fowls. He introduced the Black Orpington in 1886 and stated that the new breed was a mixture of Minorca, Langshan and Plymouth Rock blood. The new fowl immediately became popular, and additional varieties were soon turned out.

The Buff Orpington was first shown in 1894, and Mr. Cook claimed that this was the result of fusing the blood of the Hamburg, Dorking and Buff Cochin. It will be instantly noted that the two varieties are absolutely different in respect to blood lines.

With the introduction of the Buffs, a storm arose in the ranks of the English poultry fraternity. Some authorities claimed that the alleged new variety was merely the old Lincolnshire Buff masquerading under a different name.

We have no particular interest in this controversy, being willing to admit that the variety in question is both beautiful and useful, regardeless of its ancestry.

The typical Orpington, whatever the variety, is a large, stately fowl, with rather short, wide-set legs. The breast is full and round, the back broad, the body deep. Since the plumage is somewhat loose, the whole effect is that of massiveness.

In color the surface of the Buffs should be a rich, golden buff throughout, even in shade and free from shafting or a mealy appearance; the undercolor, a lighter buff, with no trace of foreign color; beak, shanks and feet, white or pinkish-white; eyes, bay; ear lobes, comb, face and wattles, rich red.

Cocks should weigh 10 pounds; hens, 8 pounds; cockerels, 8½ pounds; pullets, 7 pounds.

This is a grand general purpose breed, and is very popular in America, though somewhat handicapped because of its white skin. The flesh is fine and of good flavor. The chicks are generally sturdy, capable of making rapid growth and dressing off well at almost any age.

As layers, the hens rank very well. Their eggs are brown in color and medium size. They are most dependable sitters and careful mothers, points appreciated by those who depend upon the natural method of raising chicks.

Everything considered, the Buff Orpington well deserves the high place it holds in poultrydom.

Chapter V

Master the Unit of Operation

"He who would bring home the wealth of the Indies must carry out the wealth of the Indies." —*Proverb.*

EVERY BUSINESS should be reduced to its utmost simplicity. This is a very important principle to be observed in poultry culture on a large scale. Let a student of Arithmetic thoroly master the four fundamental rules, Addition, Subtraction, Multiplication and Division, and he has the "Open Sesame" of every problem in the book. Much the same thing is true in the poultry business or in any other business. There are certain elements that must be mastered at the beginning. After this the way is easy.

But woe to the man who has not mastered these elements!

Confusion is the peril of poultry culture. The poultryman is in danger of getting "balled up" in a seemingly endless variety of details. But this is just as true in most kinds of business that men undertake to do. The man who has a thousand adult fowls, and two thousand young birds in addition, to look after on the same farm is in danger of becoming bewildered. Things seem to fuse together. He loses sight of the perspective of his business.

This same peril hangs over the general of a great army. The instant his ideas become confused on account of the large number of individuals and companies and regiments and divisions and brigades, he is in great danger of getting "all up in the air." His mighty army is likely to be transformed into a mob—to his view. The moment his big business reaches that point he is at the mercy of the forces that oppose him.

Confusion is the deadly foe of any enterprise of any real consequence. The proprietor of a department store appreciates this fact. He is compelled to appreciate it all the time or fail utterly. So with the poultryman. If he is undertaking a business of any considerable extent he must guard against the confusion of his ideas every day and every hour or he is bound to fail.

Poultry culture in fact is a business involving so many details in all departments and on all sides that it has defied the best organizing ability for generations. Not until recent years has it been thought possible for a poultry business of any large extent to be made profitable.

What is meant by the "Unit of Operation?"

The man who keeps fifteen hens in his back yard is handling one "unit." It should be easy for any man to handle one single unit successfully. Millions of men are doing it all over the world. They are not fooled either. They are really making good. Lincoln was right when he said "You can't fool all the people all the time." It is just as true in poultry keeping as in politics. If the millions of "back-yarders" were not making good with their single units of operation they would simply quit. They are succeeding and therefore they continue.

Every poultry plant that is worth while in purpose and extent is divided into units of operation. Each poultryman has his own ideas as to the number of fowls that may be handled most advantageously in each unit.

A dozen years ago, as we have already noted, it was thought by the best authorities that not more than fifteen fowls should be kept in one pen. Some ventured to the twenty-five mark. So the number kept in each unit has been raised till some are keeping as high as 250, and in exceptional cases, 750 or more in a flock. So in the handling of young birds. Formerly not more than fifty little peeps were allowed in one squad in the brooder house. Latterly ten times that number are being handled successfully together.

It will be seen at a glance that on every farm where things are done rightly the business is divided according to a very exact syst m into easily handled units of operation. For example, suppose a man has 2,000 laying fowls. He may divide them into four units of 500 each, or he may have eight units of 250 layers each, or he may have twenty units of 100 layers each.

This is actually what must be done on every poultry farm that hopes to succeed. This is the principle that saves deadly confusion in any business. Step to the floor walker in any great department store and ask where you must go to purchase any particular article, and he will direct you instantly to the exact floor, aisle, counter and clerk. Each counter is a "unit of operation," and each clerk there on duty is supposed to be a master of his unit—but the proprietor of the store is supposed to be master of them all.

This is what makes the business successful. Without it failure must surely result. Mastery of the unit is the first key to success.

I do not say that the man who has mastered the handling of fifty fowls has proved his ability to handle successfully 5,000 divided into 100 units of operation. I do say, however, that the man who has thoroly mastered the handling of one unit of operation has made the first step and most essential step toward the big business proposition. The man who can't run one little flock successfully better quit before he begins on ten or twenty little flocks in a combined business.

I used to know a farmer who seemed utterly incompetent to hoe a hill of potatoes correctly. He would get on all sides of it—even sit down in the dirt and undertake to manipulate the soil with his own hands. The result was that he was not able to "hoe his row" along with other men in the field. He could not "keep up." The hill of potatoes was his unit of operation in that particular part of the farm work. Failing in the unit he failed in the whole business of hoeing potatoes.

Most work is largely a repetition of one thing over and over. The champion runner must master the unit of his operation—one swift long step at a time. So it is with walking or plowing or shooting or milking or anything else under the sun. So it is in keeping chickens successfully on a large scale.

I once inspected a poultry farm where tens of thousands of fowls were kept according to the most complete system of procedure. The many great laying houses were separate and distinct from one another, the 250 colony houses for the young stock were as so many separate and distinct little poultry plants so that the whole great business was like fifty or one hundred small poultry plants assembled together on one vast farm but each kept separate from all the others. It was the mastery of the unit that made the success of the whole business possible.

Correlation of units is the next most important step.

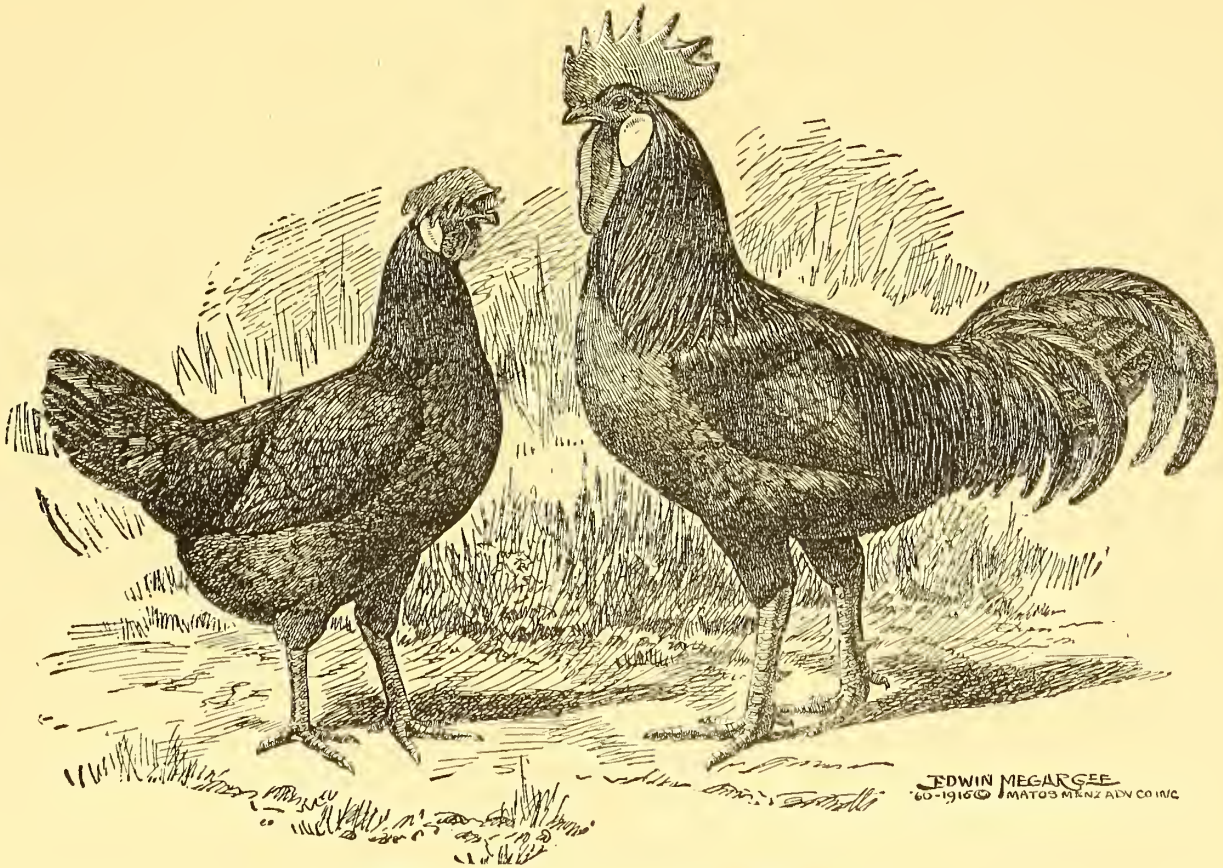
Here is where the larger vision is needed. The man who can keep 100 fowls profitably in one flock or even in four flocks better be sure of his organizing ability before he undertakes to handle twenty times that many. Here we get to the question of the big business caliber. Not every man has it; but many who do not have it at the beginning may develop it in large measure.

Mastery of the unit plus organizing ability means success with any number of fowls—just as these two factors mean success in railroading, steel or standard oil.

Here is where the necessity and wisdom of beginning on a small scale and gradually enlarging the business come in. It is leaping at one bound from the little one horse business to the twenty or one hundred horse business that spells failure for so many men in poultry culture as in any other commercial undertaking. The great commercial kings began with a single small unit of trade—one little store on a corner. They mastered the one thing and then added another and another till their commercial operations were known all over the world.

If they had begun on the large scale at first they would have been quite certain to fail. Some of them failed even in the smaller operations at first. But they "turned over" not only hundreds of thousands but millions of dollars a year. Thus their organizing abilities grew as their business grew. Practice cultures a man's organizing caliber, even tho he does fail once or twice. So it may be in the handling of fowls on a large scale.

No man is ready to enlarge his business, however, until he has thoroly mastered the undertaking that he already has in hand. But when he has thoroly mastered every part of the business proposition that he is conducting at the present time, whether in buying or selling, hatching or brooding, housing or feeding, and is able to run every department as tho it were the only business that he has in hand, and with complete success, then he is ready to add more units in order that larger results may be realized.



SINGLE COMB BLACK MINORCAS

Single Comb Black Minorcas

The Black Minorca is a stately, up-standing fowl, the largest of the Mediterranean class. The plumage color is black in all sections, with beetle-green luster on the surface. The breed originated in Spain many years ago, and was introduced into England from the island of Minorca, whence the breed name. Minorca hens are excellent layers of white-shelled eggs of largest size. The breed is very popular among fanciers, who have greatly refined it during recent years.

THE GIANT OF THE MEDITERRANEAN CLASS

The S. C. Black Minorca, large in size and stately in carriage, is the giant of that great group of fowls referred to by poultrymen as the Mediterranean class. A well-bred Minorca is truly a beautiful bird, and fanciers of this breed are both numerous and enthusiastic. Fine classes are always shown at the leading poultry exhibitions and competition is exceedingly keen.

In strictly commercial poultry circles the Minorca is not as popular as certain other breeds, though it does possess very marked utility value. As a breed it enjoys a well-deserved reputation for heavy and continuous egg-production, and there is no argument regarding the size or quality of Minorca eggs. These are pure white of shell and remarkably large in size. In fact, no other breed of chickens produces white-shelled eggs which average so large in size.

The breed originated in Spain and is evidently quite ancient. It is probably one of the offspring of the old-time Castilian breed, though greatly improved and refined as a result of the patient work of generations of poultry breeders.

It is claimed that these fowls were taken to England from the island of Minorca, which lies off the eastern coast of Spain. This explains the origin of the breed name.

The true Minorca type is peculiar, as will be noted by an examination of the accompanying drawings. The large body, with long, sloping back, is supported on long thighs and shanks, showing "plenty of daylight underneath." The head is carried well up, and the closely folded tail is low, thus adding to the general racy appearance.

Minorca breeders pay much attention to producing combs of the proper type. In the male the comb is comparatively large in size, firm and upright, inclined to follow the shape of the neck where extending beyond the back of the head. The females also have large combs, but these droop, forming a loop over the beak.

In colors, the plumage is black, showing a lustrous, beetle-green sheen on the surface. The face is red; ear-lobes, white; beak, black; shanks and toes black or dark slate.

Cocks should weigh 9 pounds; cockerels, 7½; hens, 7½; pullets, 6½.

Chapter VI

The "Full Capacity" Plant

"Luck is pluck with the 'P' worked off."
—Leigh Mitchell Hodges.

HOW MUCH can you do? How many fowls can you handle profitably? There has been so much said about over-stocking that there is need of something being said about under-stocking. I believe that one of the leading reasons for small success in many poultry ventures is the fact that the plants are run at only one third to one half their capacity.

Many a man keeps from fifty to two hundred fowls and wonders why he cannot make a living from his poultry. Plan for at least 1000 layers if it is among your possibilities. Take no "leap in the dark"; but remember another motto that is just as good: "Never venture, never have."

Thousands of farmers are showing the poorest possible business shrewdness by keeping from fifty to seventy-five per cent fewer fowls than they have the abundant capacity for. Thousands of "back-yarders" are doing the same.

Some one has said that we usually run our intellectual machinery at about 50 horse power while our capacity is about 5000 horse power. "Larger!" should be written over thousands of poultry plants. The "Captains of Industry" are the men who have large business capacity and employ their capacity to its limits. They are "sane" and yet "safe." They have the power to do things and the courage to undertake. Given such a man and his business will move forward like the sun in his course.

An incubator with a capacity of 250 eggs will cost about $30. It could easily be used four times within the year. That ought to mean 600 baby chicks produced at the very least. They will be worth $60 in any market before they have been fed the first time. This means 72 cents a dozen for 1000 eggs.

Any one can see that the machine has pretty well paid for itself already. When the chances are considered that without the incubator from $100 to $300 a year might be lost by a failure to stock the plant to its full capacity the wisdom of a little "safe and sane" courage is quite evident.

The man who is financially able to invest in a giant incubator, and the size of his business warrants it—his profits will be proportionately larger. The poultryman who can take several thousands of chicks out of his machines the same day surely has the stock supply well guaranteed. This is pre-eminently desirable.

His brooding capacity is the next problem.

The colony brooder stove can now be purchased at from $18 up to $35, according to size. These stoves will accommodate from 200 to 1500 chicks. Here's another chance for a venture. Every man must be the judge of his own ability to get thru the venture with financial safety. All we can do is to point to the opportunity to increase capacity and live up to it.

The amount of business one man can do by the most modern methods of poultry culture is nothing less than startling. Hundreds of poultrymen are running their plants in a haphazard manner, or are dividing their layers into an indefinite number of small flocks, thus handicapping themselves beyond measure. By this method it is impossible to reach the full capacity of business on any plant.

If you are certain of your ability to handle the large laying flock, plan to keep from 100 to 500 birds in a flock. Remember that every hour of labor saved will mean so much larger profits in business. It is little more work to care for a flock of 500 hens in one pen than to care for 50 in one pen, so far as the feeding is concerned. The size of the flock is one of the vital questions in considering the full capacity plant. This matter should be thoroly investigated.

One of the greatest drawbacks in poultry husbandry is the failure to secure a sufficient stock of layers to fill the henhouses. Many plants will thus run thru the winter, at half or two thirds capacity, waiting for better "luck" next season. There are very few poultrymen who cannot estimate pretty accurately about how they are to come thru three months ahead. If in September there is likely to be a shortage in your laying stock, the first of November it is time to do some earnest work. What can be done?

Chicks three or four months old the first of September will be fairly well matured by the first of November. Thousands of them are for sale if you can only find them. The advertisements will "put you wise" as to where you may be able to make purchases. Much more satisfactory bargains may be secured early than later on if you are good at hunting them.

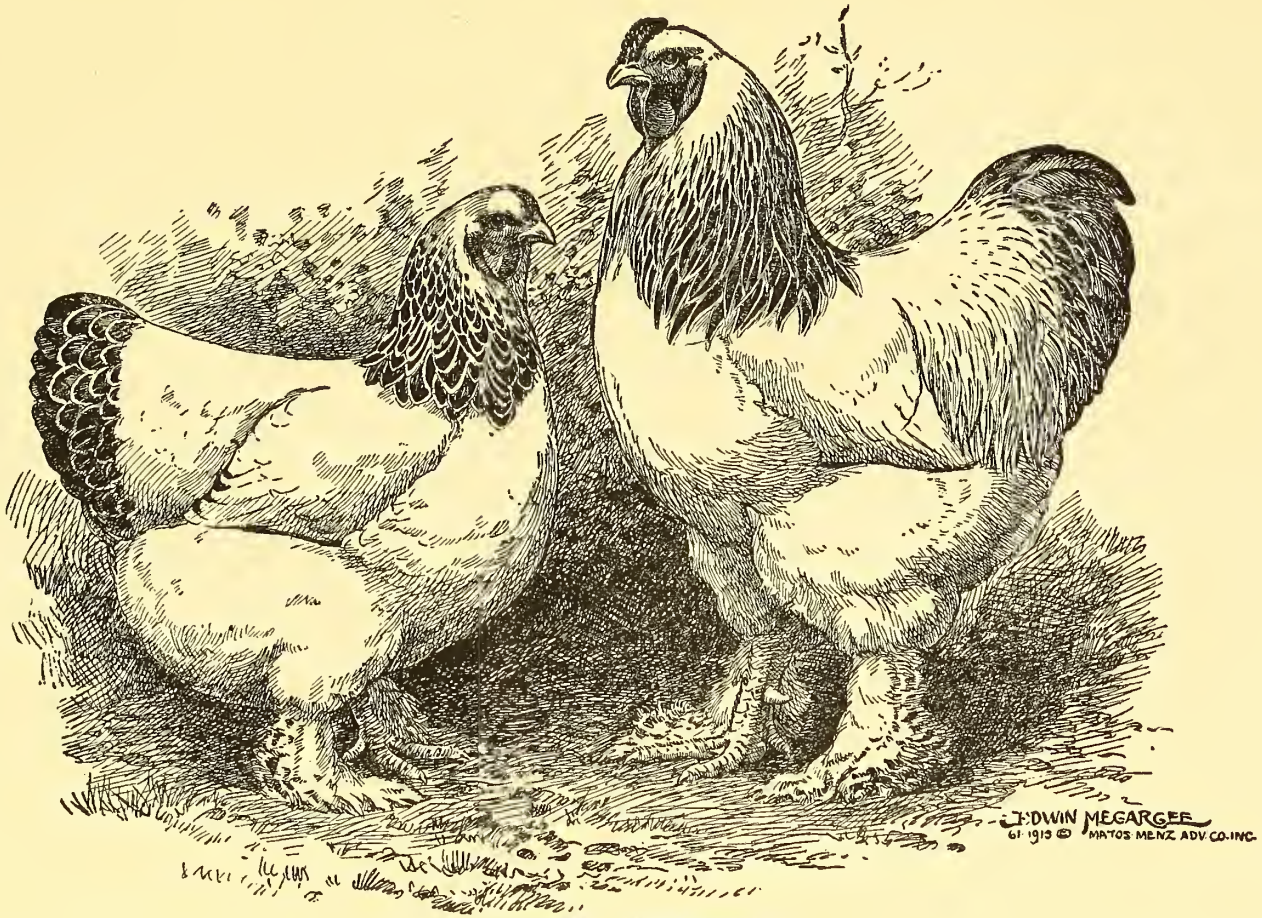
It is rather discouraging to undertake to stock a large henhouse with matured pullets in the pink of condition in October or November at two or three dollars a head. You must not reckon on getting first class birds for less money in the late fall.

Suppose you pay a dollar and fifty cents a head for them. A six-pound bird is worth just about that much for meat in any market, live weight. This is true at almost any time of the year.

It is plain therefore that there is not much financial risk in the purchase of half grown pullets at any time for commercial egg production at the rates I have named. In fact it is likely to be one of the best paying investments a poultryman can possibly make if he is short for stock. A man should be ashamed of himself if he can't make a dollar a year clear profit from each hen he owns in the production of eggs alone.

The investment of fifty dollars in fifty young pullets is not like paying that much for a suit of clothes. In six months or a year you might be able to give the clothes away; but after twelve months of use you could not sell them for even ten per cent of the purchase price. Not so with your fifty pullets. They will not only bring you a clear profit of from one to two dollars within the first twelve months, but will return your original investment of fifty dollars any moment of day or night at the nearest meat market. This might not quite hold with the smaller breeds; but it will more than hold good with all the heavier breeds. The smaller cost of feeding will more than make up the difference.

The longer the poultryman waits in making secure a full capacity plant for the winter the greater will be his disadvantage. The forehanded man will get his stock all on his farm, at any rate where he can know just what he can depend upon, as early in the fall as possible. A search begun early will be rewarded. But every day increases the scarcity of the birds you may desire to purchase and adds to the prices you will have to pay. The wise man will try the best he can to run his plant to its full capacity even tho he is compelled to borrow a few dollars to purchase new stock.



LIGHT BRAHMAS

Light Brahmas

The original stock from which the massive Light Brahma descended was produced in Asia. The early specimens were quite different from the modern type, which was perfected by American poultry breeders. This breed is conspicuous because of its great size, in weight exceeding all other kinds of domestic chickens. The feathering on shanks and toes is a well-defined characteristic. In color, the plumage is white and black, distributed as shown in cut.

A MAGNIFICENT ASIATIC BREED

The various breeds and varieties of domestic fowls which make up the Asiatic class, are noted for their large size, profuse feathering and hardiness. The greatest of the family is the magnificent fowl which thousands of arrogant poultry fanciers affectionately call "the Grand Old Light Brahma." This is the largest of all recognized breeds of chickens, the American Standard of Perfection demanding the following weight for show specimens: cocks, 12 pounds; hens, 9½ pounds; cockerels, 10 pounds; pullets, 8 pounds. These weights are often exceeded by individual specimens, but careful breeders apparently do not favor these extra-large birds.

The Light Brahma, as we know it today, is a product of the painstaking work of American poultry fanciers. The original stock was brought to America by trading vessels about the middle of the last century. These early importations came from ports in China or India, probably the former. Upon this point there seems to be some uncertainty, which will probably never be cleared up to the entire satisfaction of all concerned.

When the huge Asiatic fowl first appeared in America they attracted much attention, and were responsible for the amazing "poultry fever" which swept the country about the year 1850. There have been poultry booms since that memorable time, but none have been accompanied by such acute symptoms.

The Light Brahma is dressed in black and white, a color combination which is decidedly popular this season. In both sexes the body is white, the main tail feathers black, tail coverts and hackle black and white, as indicated in the drawing, when folded the wings appear white, but upon spreading them the black and white primaries and secondaries are disclosed. In all parti-colored sections the markings should be distinct and clean cut.

The beak is yellow, showing a dark stripe; eyes, reddish-bay; face and ear-lobes red; shanks and toes, yellow.

Note the leg and foot feathering. This should be fairly heavy, but not as profuse as that noted on exhibition Cochins.

In type, the male should be at once well-proportioned, strong yet graceful. The female corresponds in a feminine way to her powerful mate. The breast should be broad, deep and well rounded; the body, long and deep; thighs and shanks, stout and straight.

The comb is peculiar, being the typical pea-comb, consisting of three straight, low single combs joined at the base. This compact form of headgear is decidedly resistant to frost and seldom freezes in the most severe weather.

Brahma hens are rated only fair as egg-producers but when properly handled are excellent winter layers of fair sized brown eggs, since they are so hardy and well protected against weather changes. They are persistent sitters.

The chicks are rather slow to mature as compared with those of lighter breeds, but this fact works out to the advantage of producers of heavy weight table poultry, since birds of this breed remain soft-meated until they reach large size.

Brahmas are wonderfully hardy, being protected from head to foot by abundant plumage. They are quiet and docile, easily confined, never showing the effect of "nerves" as do many of the smaller breeds.

Chapter VII

A Two-Hundred-Hen Plant on Every Farm

"Our doubts are traitors
And make us lose the good we oft might win
By fearing to attempt." —*Shakespeare.*

THIS IS not a "pipe dream." The gold is in the little farm hen for the getting. Work her wisely and she'll put more profit in your pocket per cubic inch than any other crop you can produce.

The average farmer has not yet come to his own in the management of the modern egg machine. It's easy when you know how. Thousands are doing it. Millions more ought to. But there is need of study and of "dead reckoning."

Poultry culture is a business that will compare favorably, in dollars as well as in commercial dignity, with any other "culture" that the farmer can engage in. In fact it is a front line industry today.

The Plant

Set aside at least an acre of ground. Select it with care. It need not be fertile soil. Sand and gravel are most desirable. Have it high and dry as possible. Fence the whole field in with wire netting at least five feet high. Such fruit trees as will thrive in the enclosure may be planted. These will give needed shade for the fowls, besides being a source of additional profit. Poultry and tree fruit make excellent companions. If a full acre of ground can't be spared, make the enclosure as large as you can with the space at command. Remember this little parcel of land may spell "Success" for you instead of failure.

The value of the enclosing fence, hen-tight and hog-proof, is very evident.

Two hundred hens let loose over a farm! No wonder the farmer becomes disgusted with poultry! If he handled his dairy and his sheep and his hogs on the same principle he would be equally disgusted with them.

Segregation is the vital word. A few weeks of the year they may be let loose over the whole farm. But there are months during the growing season when the free range of the fowls would be as destructive as the free range of the larger live stock. Keep your poultry, as you keep your cows, where you can put your hand on any bird any moment of the day or night.

Two hundred laying hens should have a house in which to dwell that is worthy of the work they are expected to do. It ought to be as much as sixty feet long, and from sixteen to twenty feet wide. This would give room for three pens with about sixty-five fowls in a pen.

Layers kept 100 in a flock will not be likely to give such a large proportionate profit during the winter season. In fact it is better to divide a total of 200 hens into four laying squads of 50 each. The larger the flock the greater the risk of confusion and disease. The smaller, the more work to care for them.

The house should face the south. Don't make the roof so low that you will bump your head! It should measure at least seven feet between the rafters and the floor on the south side, and at least five feet on the north. The windows in front should be easily adjustable, so that they may be opened wide to let in the fresh air on quiet sunny days, or replaced with cloth screens during more severe weather—the windows closed tightly thru the fierce storms of midwinter.

It is well to have the pens of a sixty-foot house separated from each other by partitions that will quench the deadly drafts that are likely to travel thru such a long building. In a house from one hundred to two hundred feet long this precaution is still more needful.

The roosting platform should be built high enough above the floor to enable the fowls to pass under it easily. It should be wide enough and long enough to accommodate the whole flock without crowding them in the least.

The level platform with roosting poles easily adjustable is a matter of much importance. The old method of leaning two poles up against the inside wall of the henhouse and then nailing four or five cross poles to them at different elevations is inconvenient, unsightly, and works daily mischief to the whole flock.

The instinct of a fowl is to roost high. This old time roosting system, therefore, means a nightly "free for all fight" to get the highest place on the poles. It will be a daily survival of the strongest, but not necessarily the fittest. Every such fight for first place will mean fewer eggs the next day than would have been laid with a better system of roosting.

The Profit

The profits from such a plant well stocked will be as certain as the profits from the dairy barn, the hog house, or the grain fields.

The hen that will lay more than 300 eggs in 365 days is now in the land. The hen that will lay 200 eggs has become quite common-place. The hen that will lay 150 eggs in twelve months is accounted just a fair producer.

A New Jersey poultryman who keeps 1500 layers told me that his average production for each hen per year was 166 eggs. An average as high as this could

much more easily be secured from a 200-hen plant.

Suppose each hen lays a total of 120 eggs. This would mean an income of $4.00 a year from every one of the 200 layers, reckoning the reasonable average of 40c a dozen thru the year. Subtracting from this an average of $2.00 for each hen's yearly food bill, we have an annual profit of $400 from our little 200-hen plant.

This makes no reckoning of the value of the droppings, which, if properly cared for, should be worth at least ten cents a fowl. There would be a considerable income also from the sale of young cockerels. In fact, looking at the proposition from any possible point of view, with our present light on poultry husbandry, the profits will be just as dependable in this department as in any other on the farm—always supposing that the fowls be cared for with the proper degree of skill and faithfulness. Ah! "There's the rub." We must consider therefore the

Care Taking

With proper equipment the time required each day will be comparatively small. But conditions must be right and the work must be done regularly and according to well established principles.

Farmers know that this is true in the dairy business. Give the hen the same intelligent care that we give to the cow, and if she is the right kind of fowl she will return at least as large percentage of profit.

An abundance of clean, dry straw should be furnished as a litter in which to scatter the grain ration. It should be of sufficient depth to keep the birds busy all day, but it should not be matted together in piles so that they will be constantly baffled in their attempts to find the grain.

Straw, lying lightly on a smooth board floor, from six to eight inches deep, makes an ideal litter.

A light feed of moist mash the first thing in the morning, followed by a reasonable grain ration scattered in the litter, will start them into the day with songs of joy, always a premonition of eggs. Plenty of green food in the form of cabbage leaves, sprouted oats, or anything in the vegetable line that hens like, ought to be placed before them as often as two or three times a week—better every day.

Grits and ground oyster shells are of great importance. They should be kept before them constantly. A full feed of mixed grains—not all corn—should be given just before the fowls go to roost. Water should be changed and fountains cleansed every day. It will pay to use the patent drinking fountains on sale at the supply stores.

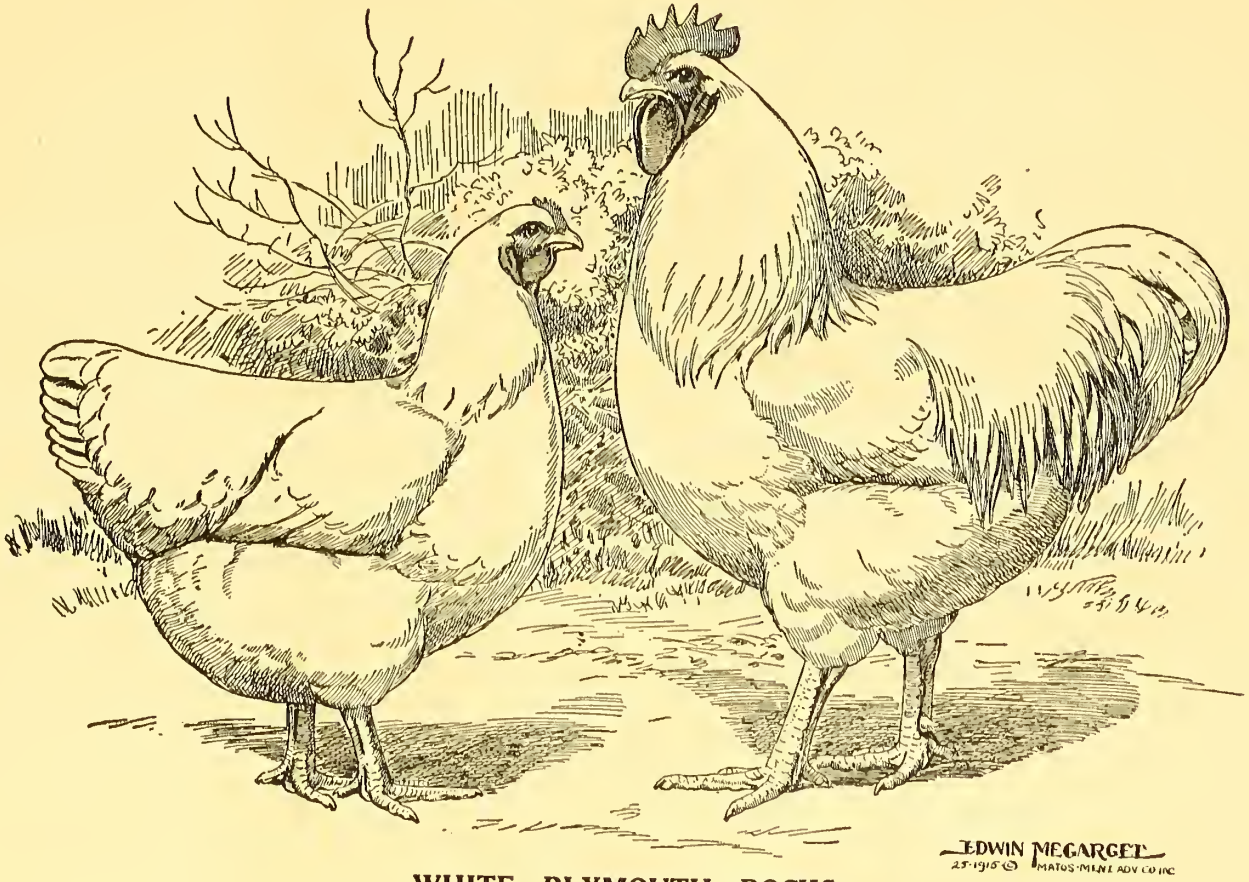
The hen is very sensitive to her surroundings. If you desire her to lay eggs keep her environment exactly the same from week to week. Any change in the arrangements of her nest, in her feeding time, in her roosting conditions, or in her habits and surroundings during the day, will instantly check the egg yield. If you make a radical change in the location and form of the nests while a flock are in full production they will be quite likely to stop laying at once until they become adjusted to the new conditions.

The pernicious habit of letting them out of their pens the moment the weather gets above the freezing point during winter is almost certain to spoil the egg crop. Give them plenty of exercise and plenty of fresh air; but do not turn them out onto the cold damp ground at every ray of sunlight.

"Letting the hens out" means change, always fatal to egg production, and it means chills, which are equally disastrous.

If you have a special breeding pen of fowls which you wish to bring thru in a vigorous and hardy condition, they may be let loose frequently and so hardened to the change. They will not lay eggs under such rough conditions; but they may bring you better chicks in March or April. If you are after eggs, however, you must handle your hens in such manner as will bring you the largest number when the prices are highest.

The laying hen is affected by her surroundings much more than the average dairy cow. Every time she deposits an egg she is reproducing her kind. Nature is very jealous in such business, and no risks are allowed. The instinct of the bird requires that all conditions, both internal and external, be ideal before the adventure of producing an offspring is attempted. The body of the fowl must be in the pink of condition and the nervous system must be at its best and absolutely undisturbed.



WHITE PLYMOUTH ROCKS

White Plymouth Rocks

The White Plymouth Rock is a strictly American product, and is generally recognized as being one of the very best general-purpose fowls. The plumage color is pure white throughout. Shanks, toes and bill are yellow; eyes, comb and wattles red. White Rocks are hardy and vigorous, good "rustlers" and the chicks make rapid growth. The hens are excellent layers, and are dependable sitters and mothers.

AMERICAN FOWLS OF UNUSUAL MERIT

All domesticated races of poultry, especially the darker-colored varieties, produce, on occasions, specimens having white or nearly white plumage. These are commonly known as "sports." This tendency is due to atavism or "throwing back" to some early progenitor having white plumage.

The White Plymouth Rock owes its origin to this phenomenon. Some twenty-five years ago there appeared here and there in the flocks of Barred Plymouth Rocks some specimens that were almost white. These were selected and bred and were the foundation of what has proved to be one of the most attractive varieties of the Plymouth Rock family. In breed characteristics—size and shape—all varieties of the Plymouth Rocks should be identical but in this respect the Whites have far outstripped the others and are today the pattern for the other varieties. It is truly amazing to note the degree of perfection to which the breeders have brought this variety. The plumage is absolutely white, the eyes are bright red and the beaks and shanks are a beautiful golden yellow. The head points have attained a perfection scarcely equalled in any other breed. In the more prominent shows one sees many specimens that fulfill every standard requirement.

It is unnecessary to go into a detailed description of the type of the White Plymouth Rock as the accompanying illustration gives an excellent idea of the latest and most fashionable type and is far more effective than any word description could be.

In color, this variety should be white in all sections, white to the skin. The eyes, face, comb and wattles should be bright red, the beak and shanks yellow.

The standard weights are: Cock, 9½ pounds; Cockerel, 8 pounds; Hen, 7½ pounds; Pullet, 6 pounds.

Chapter VIII

Day-Old Chicks Commercialized

"There is Nothing as Mighty as Armies except an Idea when its day has come." —*Victor Hugo.*

THE OUTLOOK for poultry culture is brighter than ever before. This is the verdict of every man whose opinion is worthy of notice. There is a universal forecast for better things for this great industry.

We have entered upon a new era. The world war was fought to a finish, and poultry culture is bound to come back to its own with increased advantage.

The day-old chick will be the largest factor in this new program of progress. Without this little fuzzy fellow in sufficient numbers we cannot expect to do much.

Hens are short lived. The flock must be replenished constantly. This is necessary not only to maintain the proper average of stock and production, but also in order to insure the increase demanded by a constantly growing industry. Millions of baby chicks will be needed right here in America within the next two or three years if we are to keep pace with the demands of the local and world markets.

The day-old chick accordingly has become commercialized on a very large scale. In fact, there is an "International Baby Chick Association" back of this big business. This I. B. C. A. has some of the ablest captains of commerce in the United States at the head of it.

Its object is "to foster, promote, improve and protect the baby chick industry and all allied branches of poultry husbandry." It was formed in September, 1916 at Cleveland, Ohio. Millions of dollars are now invested in vast equipments in various sections of the country for the most efficient production of baby chicks on the largest possible scale. The work is multiplying rapidly.

This great industry is closely related to the work of the average poultryman, whether he be doing business on a large or comparatively small scale. Too few appreciate this phase of the question. When the proper relations of the different branches of poultry production are better understood, the hatching of chickens on a small scale and by "private parties" will largely be done away with. We will look to the big hatcheries for our newly born chicks.

There are many reasons for this. Any first rate industry is bound to become systematized more and more as men of large business caliber get into the lead of things. Just as in a great steel mill one man does one kind of work and another does another kind, each one being specially skilled in his workmanship, so in this great business of producing poultry and eggs for the world there is coming a "division of labor" that will be for the great advantage of all.

Suppose the man who makes our shoes were to produce the leather—raising the cattle, butchering them, tanning the hides, etc.—for the making of all his products. He would have to be a multi-millionaire from the beginning if he were to do a business worth while. He would be required to conduct an industry of many heads and many widely different departments. It would in fact mean a return to primitive conditions when a man raised his own steer, skinned it, tanned the hide in his own crude way, and nailed together his own shoes of "rawhide" by exceedingly rustic methods; for only a very heavily capitalized corporation could promote with success such a varied business.

It is the "division of labor" in the industrial world that has brought us up to such marvelous efficiency in the production of all kinds of commercial products. So this same principle is operating more and more in the supply of poultry and eggs for the hundreds of millions of people who demand them thruout the world today.

The baby-chick business on such a large scale assures us of the work of specialists at the most vital point of the industry. It might be asked, "If the dairyman produces his own calves, why should not the poultryman produce his own day old chicks?" The two cases are very different.

The one-man poultry farm requires at least a thousand first class pullets every fall for the best results the following season. There are great risks to be run in the hatching of thousands of eggs in the hope of getting thousands of young chicks. The ordinary poultryman does not always possess the facilities for the production of eggs that are most certain to hatch. His incubating equipment may also not be up to the highest point of efficiency. This part of the business may not be his specialty. Therefore he is at a disadvantage in comparison with the man or the giant corporation who has large capital invested in a plant devoted exclusively to the production of a baby-chick output that will scale a hundred per cent prime in every particular.

Specialists are now to be found in every business and profession. There is a great place for the physician who knows all there is to be known about some particular parts of the body. He is almost certain to command a far larger income than the man who spreads his skill over every part of the body in a "general practice." There is the eye specialist, the throat specialist, the ear specialist, and so on **ad infinitum**. In agricul-

ture it is the same. We have our "potato kings," our wheat and corn specialists, our masters in the production of meat animals, dairy animals, etc.

So the poultry business has come to the stage of development where the specialists must be called in or our progress will lag behind. The one most needed at the present time appears to be the baby-chick man—the man who gives his exclusive attention to the production of newly hatched chicks that will stand shipment a hundred or a thousand miles and get thru in first class condition to enter the brooding system of any man who desires to raise a dozen young fowls or a dozen thousand.

This specialty business means great things for the poultry industry. It is bound to increase immensely the general output all over America and all over the world. It would be impossible for poultrymen to restock their plants sufficiently without the services of the day-old chick man or firm. With such service in large strength, poultry culture will be able to go forward rapidly and easily to the fulfillment of its highest demands. There need be no familiar outcry about the failure of eggs to hatch on any particular chicken farm. The baby-chick man takes all that responsibility. He delivers the chickens actually hatched in as large numbers as you see fit to order. The rest is up to you of course.

It is well for every poultryman to decide definitely whether he will depend exclusively on his own possibly defective methods for chicken production, or rely mainly, (unless thoroly equipped at home), on the purchase of day-old chicks to be delivered at just what day and hour he may dictate and in just what numbers he may see fit to order. It is therefore well for him to make careful calculations as to his hatching ability; but take no risks on falling short on early hatched birds.

The incalculable advantage to poultrymen of the baby chick industry is this fact that they can order their supply of freshly hatched birds for any day of any month of the young chick season. I say "incalculable"; for it is quite likely that the lack of young chicks at the proper time is the cause of more failures in the poultry business than any other one thing. The man who takes the right view of this subject will not be "short" for chicks when chicks are the one thing that spell success for his year's work. The man who fails to take the right view may find himself in the "lurch" of a fatal shortage of laying and breeding stock at the crucial turn of the season. This will mean either long prices for fully grown birds, or short output and therefore short profits all the way thru the next year.

The prices of young chicks from the large hatcheries range from eight or ten dollars a hundred up to fancy figures.

I have seen an advertisement of one hatching establishment where it is claimed that a capacity of between six and seven hundred thousand eggs at a time is maintained. Such a business ought to mean reasonable prices and equipment for the most efficient production possible. No firm could do business on such a scale as this year after year unless the product which they put out proves to be first class in every particular.

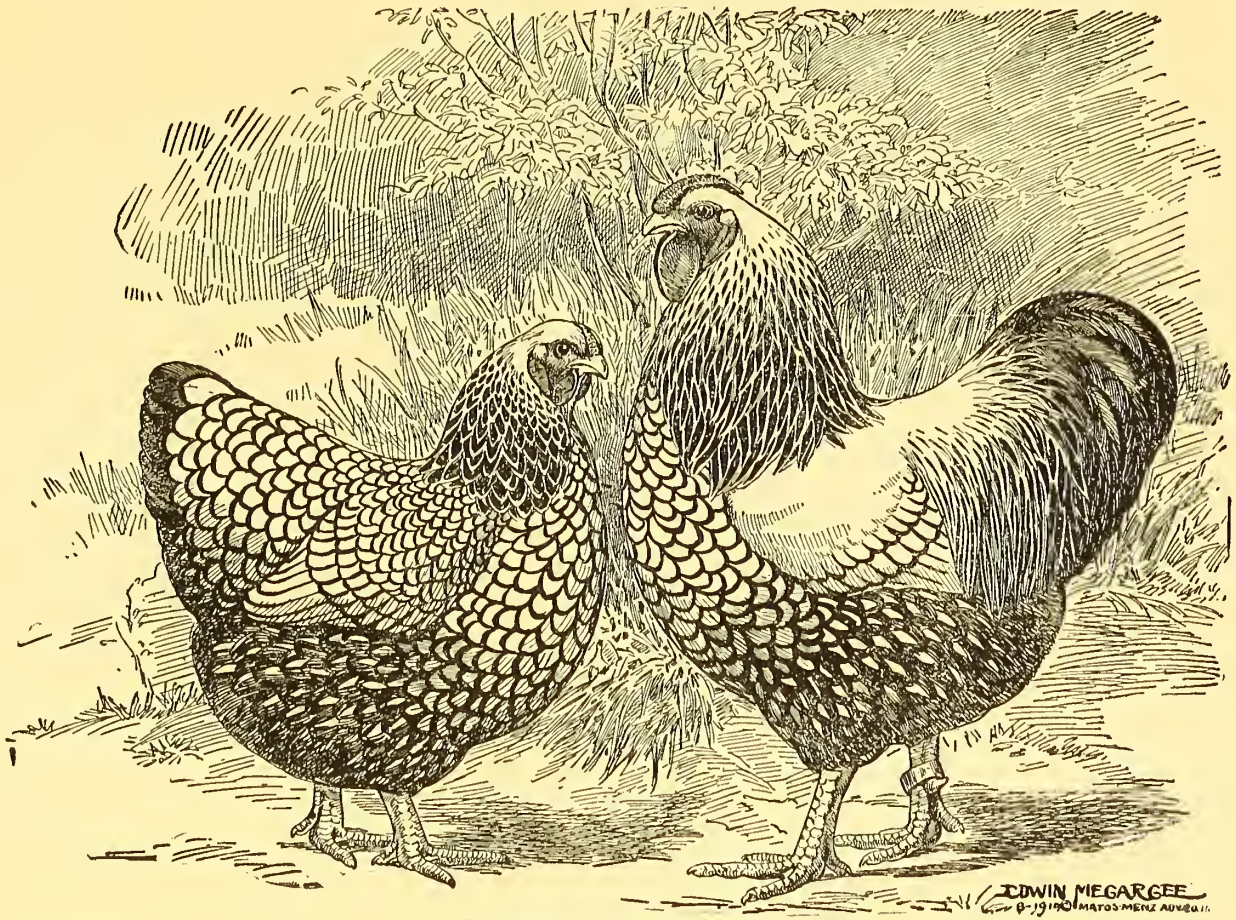
In April, 1918, a law permitting shipment of young chicks by parcel post went into effect. When shipped by this method there is stringent requirement that they be packed with proper care, and they must not be sent to a point where they cannot be delivered within seventy-two hours. No insurance nor C. O. D. priviliges are allowed.

This method of transportation gives an immense advantage to the poultry fraternity. Of course shipment by express is easy, and where there is direct express communication between points, this is probably the preferred form of transportation, tho it may cost a little more.

Packages are manufactured specially for the most convenient shipment of the little fellows. From twenty-five to one hundred can be shipped at once. It is necessary to pack them and forward them promptly after taking them from the incubator and while they still have sufficient natural nourishment in their digestive systems to keep them in good condition two or three days without artificial feeding.

Cuddled together in the little scientifically constructed package, they will ride to their distant destination—20 miles away or 2,000—with as much comfort and safety as they could find in a down-to-date brooder or under the wing of a mother hen.

Instruction is furnished by the baby chick firm as to how to take care of them on arrival and all the way thru the brooding season. In every possible way the purchaser is safeguarded against loss. This is to the best interests of the baby chick firm as well as of the purchaser. Little risk is therefore incurred.



SILVER WYANDOTTES

Silver Wyandottes

The deservedly popular Wyandotte breed embraces eight distinct varieties, of which the Silver Wyandotte was the first to appear. This magnificent fowl is a strictly American product, but is now widely bred in all parts of the world. It appeals to fanciers because of its beauty of form and plumage; to utility poultrymen because of its real merit as a producer of eggs and flesh. The plumage color is white and black, marked as shown in the illustration. The skin is yellow, which best suits American market demands. Wyandotte eggs are fair sized, with brown shells. Standard weights: cock, 8½ pounds; cockerel, 7½ pounds; hen, 6½ pounds; pullets, 5½ pounds.

THE ORIGINAL WYANDOTTE

American poultrymen are proud of the three great business breeds of poultry which were produced and perfected in this country. The Rocks, 'Dottes and Reds have most emphatically made good and are now extensively and profitably bred in all parts of the world. As all three are so very popular it is difficult to say which stands first in public esteem, but certain it is the Wyandotte need not fear being compared with the other breeds.

The Wyandotte seems first to have appeared in New York state shortly prior to the year 1870. It seems to have been the purpose of its originators to produce a new bantam type to be built upon a mixture of the blood of Buff Cochins and Sebright Bantams. The desired small size could not be obtained and the attempt was abandoned. Another cross of Silver Spangled Hamburgs and Buff Cochins was made, and the progeny of the two crosses mated together. From this source, with the possible slight addition of other blood, the Silver Wyandotte, the first of the breed, was obtained.

For a long time this new breed was known by many different names, as each breeder seems to have coined a new one. Veteran poultrymen will recall a few of them—Hambrights, Eurekas, Hambeltonians, American Sebrights, Sebright Cochins, all were used. At the time the breed was admitted to the Standard of Perfection in 1883, the various factions could not agree upon any existing name, so "Wyandotte" was decided upon as a compromise. This may have been in honor of the Wyandotte tribe of Indians, but it is said that the man who suggested the name had in mind a coasting vessel of the same name, which was the property of his father.

With the advent of new varieties of the breed, this original kind was called the Silver-Laced, but this has been shortened and the parent variety is now known as the Silver Wyandotte.

Though seven later varieties are recognized by the American Poultry Association and many of them are beautiful and valuable, the old Silver is still a great favorite.

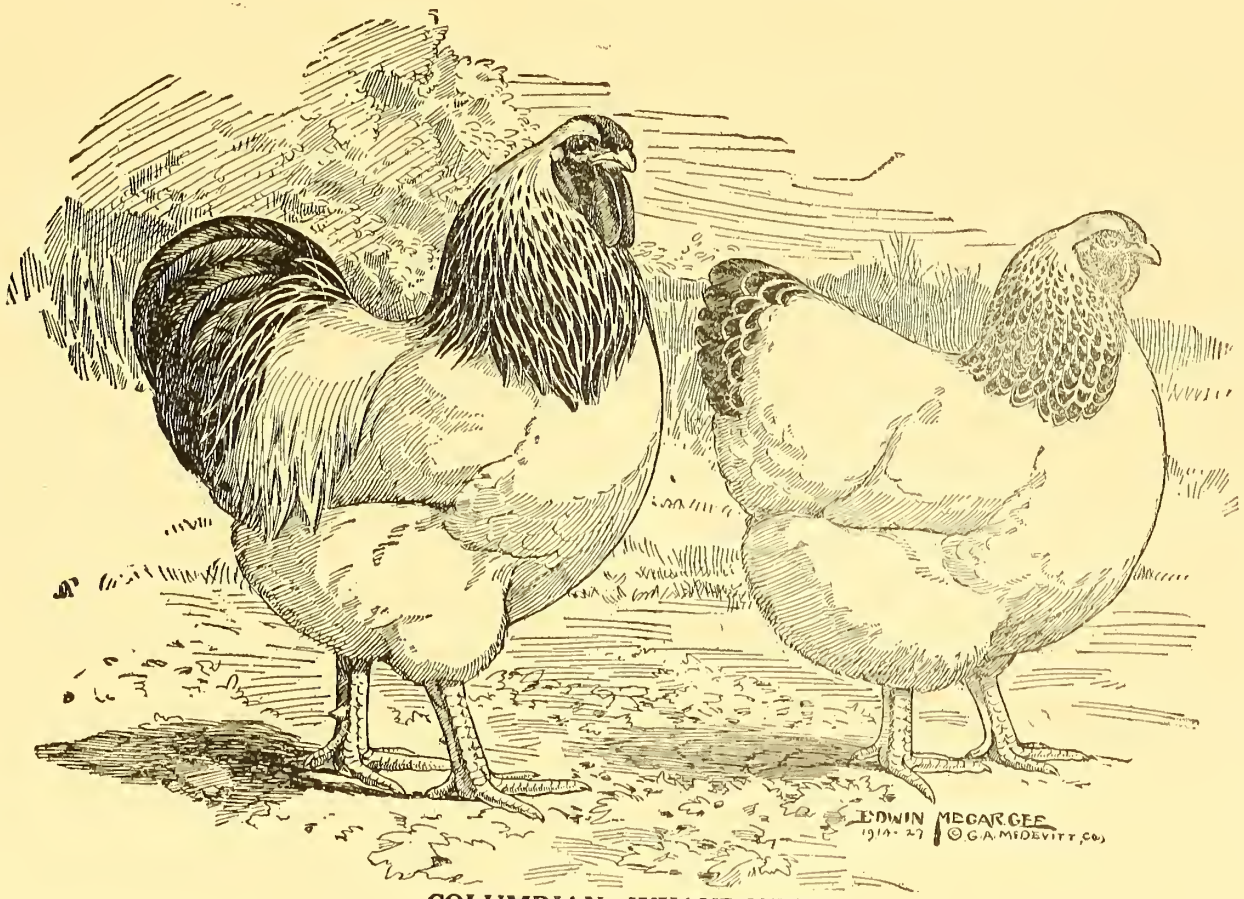
From the standpoint of utility the Silver Wyandotte is truly worth while. It is particularly hardy, a great hustler, produces brown-shelled eggs in abundance and dresses nicely from broiler age to maturity. The hen may safely be intrusted the duty of hatching and rearing the chicks, being quiet and dependable.

At all times these birds are plump and blocky, a very valuable characteristic.

The fancier, whose primary interest is in the shape and color of his fowl, has an interesting problem before him when he attempts to produce winning Silvers. The plumage color is silvery white and black. The hackle and saddle of the male are striped with black. His wing-bow and wind-bay are white; wing-bar white, laced with black; tail, lustrous black; body plumage, white, laced with black.

The hackle feathers of the female are white with black centers, and her tail black. Her body plumage is white with black lacing. Such a combination is always striking and attractive.

It is most desirable that hackles and saddles be free from any trace of brassiness. The laced feathers should have large, oval centers; the white free from mossiness. Another special point is the lacing on the breast. This should be free from white edging, a common fault.



COLUMBIAN WYANDOTTES

Columbian Wyandottes

The Columbian Wyandotte was first brought out in New England, the original cross being Light Brahma and White Wyandotte. The Brahma coloring has been retained, but in type this variety is a true Wyandotte. These fowls possess much beauty and great practical qualities. They are hardy and dress off well at all ages. The hens lay brown-shelled eggs in satisfactory numbers and are excellent sitters. Shanks and skin are yellow; plumage, black and white.

A WYANDOTTE WITH LIGHT BRAHMA MARKINGS

All of the various members of the Wyandotte family owe their existence in some measure to the Brahma. The Columbian Wyandotte, however, has a double debt of gratitude to pay in this respect, for it has Brahma blood on both sides of its family.

The Columbian Wyandotte was produced by crossing Light Brahmas, having almost bare shanks, on White Wyandottes. Care in selection has obliberated the Brahma foot feathering and stamped the Wyandotte type unmistakably on this variety, while the rich and attractive Light Brahma coloring has been preserved.

While it is true that there were originally some other crosses made, having in view the production of a fowl of similar description, they were so unsuccessful as compared to the Brahma-Wyandotte cross that they might be said to have died in infancy; and it is generally conceded that all of the typical Columbian Wyandottes of today trace back to this cross.

In type the variety under discussion should be a true Wyandotte in every particular. It is not amiss to say here that this variety as bred today is well worthy of the breed name, having been brought to a high degree of perfection.

As to color, the beak and shanks are a rich yellow. The eyes, face, comb, wattles and ear lobes are red. The plumage color is identical with that of the Light Brahma. The hackle is white, beautifully striped with black, tail coverts of the male are black, edged with white, while the female has a double row of laced coverts about the tail. The flights and secondaries are black, edged with white. The body color is white.

This variety has all the good qualities of the popular Wyandotte breed, being excellent layers of brown-shelled eggs and making good sitters and mothers. The chicks are hardy and quick to mature. In fact, Columbian Wyandottes combine to a high degree those qualities of beauty and utility which are so much sought after.

The standard weights for all Wyandottes are: cock, 8½ pounds; cockerel, 7½ pounds; hen, 6½ pounds; pullet, 5½ pounds. As a rule, parti-colored fowls—especially in cases where black is present—are not generally popular among breeders of market poultry, since they frequently show dark-colored pinfeathers. In the case of the Columbian Wyandotte, this objection does not exist, as the plumage of body and thighs is white. The variety is worthy of more general adoption by fanciers and commercial poultrymen alike.

Chapter IX

Fowl Diseases

"Great fleas have little fleas upon their backs to bite 'em,—
And little fleas have lesser fleas and so ad infinitum."

DISEASE is defined in the dictionaries as any departure from the normal in the physical condition of an animal of any kind. Our fowls are subject to such "departures" now and then. This is especially true in the winter season while they are necessarily closed in—and most unnatural conditions are liable to prevail.

A little attention in time, and then a careful study of each case of sickness, or of any slight ailment of the fowls may save a large poultry business.

To some people this is an extremely interesting subject. They take naturally to all sorts of investigations into diseases and into the cure of them. To many people, however, it is a most distasteful theme.

Let it be said and repeated again and again that Prevention is a thousand fold better than Cure. But when disease strikes a fowl or a flock a cure must be sought, and defective environment must be corrected.

Bumble Foot

This disease is well named. The affected member is well described by the two-word phrase. The foot is swollen in the center of the bottom, and in many cases the bird is crippled most pitifully.

Cause—This abomination among fowls is caused by another abomination—high roosting places. The bird drops down from these high places several times a day and strikes heavily on a hard floor. It requires only a few weeks of the repetition of this process to produce a disease reaching to the bone of the foot, causing swelling, pus-formation, and crippling.

Cure—Instantly adjust the roosting platforms so that the leap to the floor may be as low as possible. There should always be from four to six inches of light litter in which the birds may scratch for their grain and upon which they may alight as they descend from their sleeping quarters. A skillful hand may be able to cut the corn out with a sharp knife. If this is undertaken be careful to thoroly disinfect the wound and keep the bird for a day or two in a separate apartment.

Frosted Combs and Wattles

Thousands of fowls every year are rendered useless at a most pivotal period by having their tender wattles and combs bitten deeply by the killing temperatures of January and February. They are weakened, made eggless to a large extent, and the eggs that they do produce are not at all fit for hatching.

Cause—Open drinking fountains are one cause of frozen wattles. The sensitive members droop into the ice cold waters and immediately the extreme temperature does its deadly work. Zero weather immediately following a period of much wetness, while the atmosphere is loaded with moisture, will be likely to result badly, especially for the fowls with heavy head-gear.

Cure—Immediately upon discovering frost bitten combs or wattles, bathe them in cold water. Carbolated vaseline applied two or three times a day to the blighted members will hasten a complete cure. Cock birds should not be relied upon for breeding purposes until several weeks after the complete healing of a frosted comb.

Affected Livers

Fowls as well as humans have livers. Laziness, listlessness, lack of appetite, and general indisposition to do business, are pretty sure symptoms.

Cause—Heavy feeding of corn and fat producing mash with little exercise are the leading causes of this discouraging affection.

Cure—Cut down on the starchy foods, give an abundance of tender green stuff, and compel the fowls to work hard for every kernel of grain they swallow. It is safe to increase somewhat the meat diet. But have a care here. Do not overdo the meat food or general indigestion and diarrhoea may result.

Roup

Roup is a deadly disease. Its outbreak on any poultry plant should be the signal for a most active campaign. Otherwise the whole poultry population, whether ten or ten tnousand, may be swept off the farm. It is an infectious disease and is communicated from one bird to another mostly thru the drinking water. The mucous membranes of the mouth and throat and nose are attacked and the eyes suffer seriously.

Cause—The cause is a very small parasite capable of very rapid multiplication under conditions of environment that are favorable. It is now well understood that the same germ that causes this disease is also the cause of chicken pox and canker in poultry.

Cure—A little kerosene, copper sulphate, or potassium permanganate put into the drinking water will be likely greatly to aid in the killing of the germs. But the moment the disease is discovered the affected birds should be segregated from the rest of the flock. It is a disease that is too dangerous to be trifled with. I have seen a flock of six hundred hens practically destroyed in one season. When the disease has been detected with certainty radical measures should be adopted. Rather than permit it to spread in the flock the

sick fowls better be killed and burned and the house thoroly cleaned and fumigated.

Fowl Cholera

This, too, is a most deadly disease. It is not very common; but whenever it attacks a flock it is quite certain to ruin all hopes of a prosperous business. Birds die in a few hours when cholera strikes them in its most virulent form. In milder cases the victims live longer, but are practically certain to die as a result of contracting this terrible disease. It is as fatal among poultry of all kinds as hog cholera among swine or Asiatic cholera among human beings of any race or nation.

In case it should break out in your flock every bird affected should be instantly quarantined. In fact as soon as the disease is certainly detected it will be better to kill and burn every sick bird on the place. Clean the quarters most thoroly and fumigate them. An attempt to "cure" fowl cholera when it once gets a foothold on your farm will quite likely result in a failure of your entire poultry business. Only an expert veterinary would be at all assured of success in stamping out such a plague on any poultry farm.

Fowl Tuberculosis

"Avian tuberculosis" as this is sometimes called, or tuberculosis of poultry, is becoming quite a menace in the Northwest. This means that we should be on the watch for it all over the United States. We know what this disease means in men and in cattle. Let us take the lesson in time and stamp it out at once wherever it appears in the poultry yards of the nation.

Prof. T. D. Beckwith, bacteriologist of the Oregon Agricultural College, has sent abroad a very informing bulletin on this terrible disease of poultry. The symptoms of the disease are similar to those in other animals suffering from tuberculosis—weakness, droopiness, emaciation; a general run-down condition. The disease comes by slow degrees and cannot be readily detected until well advanced. The appetite is usually strengthened. Of course egg production is impossible to any profitable degree, and the raising of chicks from affected stock should be accounted altogether out of the question.

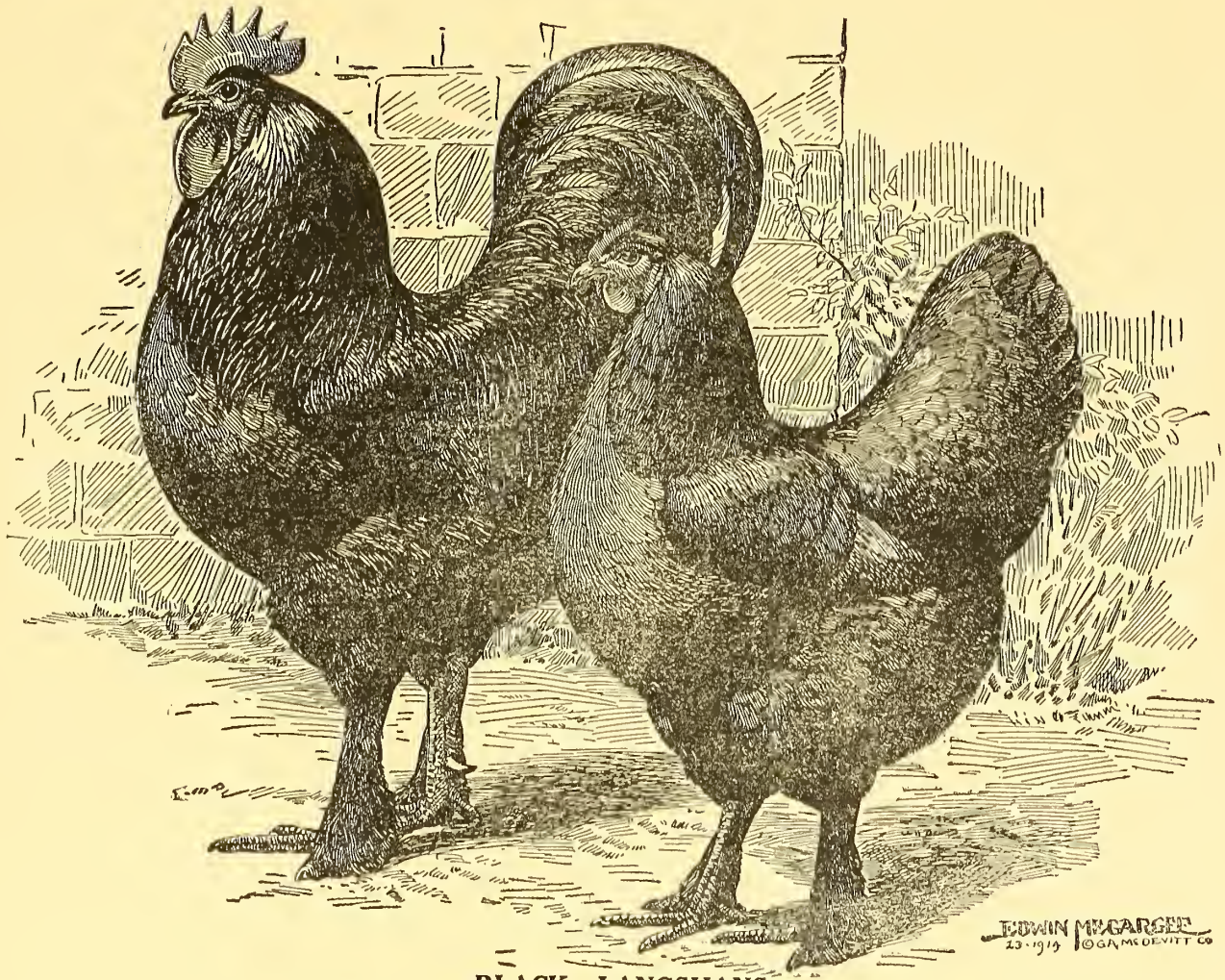
The lungs are not usually attacked—at any rate in not more than twenty per cent of the cases. In almost all cases the liver and the spleen are the organs affected. The disease may be almost certainly detected by an examination of the liver and spleen—and where fowls show general symptoms such as I have described above it will be worth while to kill one or two and examine very carefully these organs. If "very small whitish and yellowish spots, sometimes slightly swollen" are found on the organs named, tuberculosis may be strongly suspected, and the only safe course on a large poultry plant will be to call a veterinary surgeon at once and proceed according to his counsel.

Dr. Beckwith affirms that "there is no known cure for the disease." His counsel is wholly along the lines of cleaning out the houses, killing and burning the affected birds, and thoroly disinfecting the premises. We may well rejoice that this terrible disease is not yet prevalent thruout the country. But now is the time for poultrymen to be on their guard against its encroachments. We have seen thousands of the finest dairy cattle in the United States slaughtered and cremated during the last two decades because of bovine tuberculosis and the terrible foot and mouth disease. These are parables for the enlightenment of all poultrymen. Let's be on our guard against the encroachment of all poultry diseases of whatever kind.

This means PREVENTION, always written in large capitals.

Cleanliness should be one of the first principles insisted upon by every man who keeps fowls, whether in small or large numbers. Test your house every day. Disease revels in filth. Keep the quarters of the fowls clean and you are well started in a successful war against all kinds of disease.

Ventilation without drafts and plenty of exercise, together with an abundance of fresh water and wholesome food with due regard to variety and the "balanced" principle will be almost certain to carry a flock thru year after year in perfect health. Have a care always about bringing new stock in. Inspect them most rigidly lest they bring disease.



BLACK LANGSHANS

Black Langshans

China is the home of the lordly Black Langshans, a breed combining most attractive appearance with genuine utility value. As winter layers of large, brown eggs, they deservedly enjoy a great reputation. Like all Asiatic breeds, the Langshans are slow in maturing, but they are hardy, husky and vigorous. The plumage color is glossy black throughout. Eyes, black or dark brown; face, ear lobes, comb and wattles, red; shanks, black. The latter and the outer toes are lightly feathered.

A CHINESE FOWL OF ANCIENT LINEAGE

The first importation of Langshans into this country was made in 1876 by E. A. Samuels, of Massachusetts, from the Langshan district of northern China. Previous to this, about 1872, an English officer stationed in the said district sent some of these fowls to his uncle, Major Croad, of Sussex, England.

From the time of their importation in to this country until the date of their admission to the Standard, a period of seven years, the Langshans met with the bitterest kind of opposition, chiefly from the breeders of Black Cochins, then making their bid for popularity. These breeders claimed that the Langshans were nothing but stilty Black Cochins. That the Langshans triumphed and were finally accepted despite criticism and opposition was due to their sterling worth and the evidence they displayed of purest lineage.

It is said that the Langshan can trace its history back to earliest times and that it has been bred in China since before the Christian era. Whether or not this be true, the fact remains that the Langshan blood is most potent, breeding true to type to a marvelous degree and when crossed with other breeds subduing the other blood and stamping its breed characteristics unmistakably on the progeny. This would indicate that it is not only a very ancient breed, but one that has been bred in line for a long period of time.

The Langshan is one of our large breeds of domestic poultry. Its legs are noticably long and its body deep and full. The tail is carried almost upright and is well spread, that of the male having a wealth of flowing sickle feathers. The top of the tail should be nearly on a level with the comb. The breast is full and broad, the thighs are heavy and there is but little fluff. The shanks and the outer toe are sparsely feathered.

There are two varieties of the Langshan, the black and white, the latter, of course, having its origin as a "sport" from the black.

The Black Langshan which is depicted herewith, is a most gorgeously colored fowl, the top color being glossed with a brilliant sheen of beetle-green. The comb, face, ear lobes and wattles are red, the eyes are black or deep brown, the shanks and feet are black, the soles of the latter being pink. The undercolor should be black or dark slate color.

The weights are: cock, 9½ pounds; cockerel, 8 pounds; hen, 7½ pounds; pullets, 6½ pounds.

The Langshan is one of the best layers of all heavyweight fowls. It is quiet and very easily handled.

Chapter X

Midsummer Problems and Perplexities

"Hold on till you can't hold on any longer, and then still hold on."—Ancient Proverb.

MIDSUMMER is the season of growth with the youngsters. It is also a time of uncertainty as to results with the mature fowls. In some respects it is the most unsatisfactory season of the year. But the man who proves a slacker in his poultry yards in July and August will be certain to suffer serious loss all thru the year.

It is well to look our "Problems and Perplexities" squarely in the eye and master them every day as they come.

The Sitting Hen—We welcome her as a godsend in March and April, but most of us loathe the sight of her in hot midsummer. Nevertheless she is present in countless numbers. She has already become a nuisance, a problem, a perplexity.

First, be sure that you do not wish to make use of her determination to bring out another brood of chicks. Possibly she knows more about your interests than you yourself do. But if you are sure that you have no use for a sitting hen, summon all your patience, and, **break her up.** It's easy. Get the method and work it. A little pen in the shade, slatted at the bottom that she may keep cool as possible with no opportunity to sit on the remotest semblance of a nest, will soon cure her.

Do not let her sit on the nest more than one night. The longer she sits the harder she breaks. Don't tie her out in the burning sun—if she is tethered at all let it be in the shade. Feed her an egg ration—that is, a ration that will make her lay eggs as soon as possible again.

Do not treat her cruelly. I have seen grave crimes unintentionally committed in the handling of that useful factor in poultry culture, the sitting hen. Get into sympathy with her. Make a pet of her. She's interesting.

The Spider Louse—The spider louse is one of the most damnable creatures on the face of the earth. If there were an eternal perdition in store for the murderous pests which stalk abroad at midnight, this thing that I am speaking of should be assigned to the hottest corner. Midsummer is his season of harvest. Get your gun or he'll get you.

This diminutive savage of the silent hours of the night will creep in on your flock before you suspect him. Many do not know the difference between him and the common body louse. If given a fair chance to roll in the dust in midsummer the fowls will be little troubled with this latter pest. But the dust bath during the day does not touch the problem of the spider louse. He skulks by thousands in the cracks of the roosting place and underneath the roosting pole. As soon as the fowls retire for the night these little bloodsuckers raid them in countless numbers. I have seen hens literally driven from their sleeping quarters by these king plagues of the poultry house.

If they once get "dug in" they are hard to dislodge. A pound of sulphur burned in a small henhouse will help some, but many of them seem to get their gas masks on in time to escape any ill effects. The ordinary louse powder used liberally on the hens and all about the roost platform will get the victory in time. There should be successive applications two or three days apart until the nuisance is abated. But never forget that you must conquer the spider louse or he will drive you out of business.

Decaying Vegetable Matter—Vegetable food is so plentiful in warm weather that it becomes a burden, and sometimes a peril. Of course this is true only when the birds are kept in small space. During a long, wet spell weeds grow so rapidly and tender grass becomes so plentiful that one must beware or a pile of decaying stuff will appear in the pens of the birds. Feed them an abundance of such tender green stuff; but keep the remains well cleared up. A little lack here may mean death to some of the fowls.

Sour Wet Mash—Wet mash will sour with surprising quickness in hot midsummer. This means that it gets into a state of decay rendering it utterly unfit for fowls to eat. It will be safe to place before them only as much as they will eat up in a few minutes. Keep all food of this character cleaned up.

Usually fowls will refuse to eat mash that has become sour; but greedy birds, and birds that are very hungry, are likely to eat almost anything of this nature. They must therefore be guarded against the temptation thus to damage their health.

To Kill or Not to Kill—In midsummer the temptation is strong to kill fowls, from the squab broiler all the way up to the high grade birds two years old or more. This feeling may not be as strong in some poultrymen as in others; but my own experience has been that I must call out my keenest judgment and most sober self possession at this season of the year, or I will be likely to make many regrettable mistakes along this line.

We feel sure of the young cockerels. Therefore the old one that may be worth more than all the young cockerels put together is endangered. Don't kill him and don't sell him till you are certain of superior ma-

terial to succeed him. He may be worth hundreds of dollars to you if your business is of any very great consequence. Reason in exactly the same manner concerning your hens of proven quality, even tho they may be three or four years old. But the bird that has evidently come to the end of its usefulness and profit may be promptly sold at this season, or decapitated as a substitute for "red meat."

The tender cockerels must not be wasted by being killed too young. They are never more profitable to keep than when they are making their rapid growth at mid-maturity. At this season, too, they gather much of their food from the ground if they have free range, and can be fed cheaply if kept in close confinement. Do not be too hasty about killing them or sending them to market. Of course pullets will be guarded with greatest care.

To Hatch or Not to Hatch—Great numbers are hatched in July and August. As poultry keeping is now conducted it does not so much matter when the chicks are hatched. Eggs are cheap during the hot months. This is one advantage of summer hatching, but a small one. A July chick should begin laying in January or February, according to the breed. This ought to mean a splendid productive season till September or October. The late molt should mean heavy winter layers the second year.

Upon the whole it will be far better to hatch chicks out in July and August than to be short of laying stock for the next two seasons. Chicks hatched so late will not make as good breeders as those hatched earlier. They are likely to develop more quickly than chicks hatched earlier in the season; but will not attain the size that they would if brought out in March or April. They run more to the bantam class. That in fact is the way bantams are produced—they are late hatched chicks season after season.

Culling—The larger the flock in small space the less the advantage of the birds to make a proper growth. No cripples should be tolerated under any consideration. Day-old deformed chicks should be promptly put to death. If kept they will be a disgrace to your poultry yard. They will be weak and unprofitable to feed. In fact there is no good reason for a cripple or a weakling to be spared.

Where there is only a slight defect in shape or size it will be worth while to raise the birds purely for meat. We cannot look for absolute perfection. Cull closely, however. Any bird that "gives you a pain" every time you look at it should be cut out of the main flock. The best ones should be given the best opportunity to make the most of themselves.

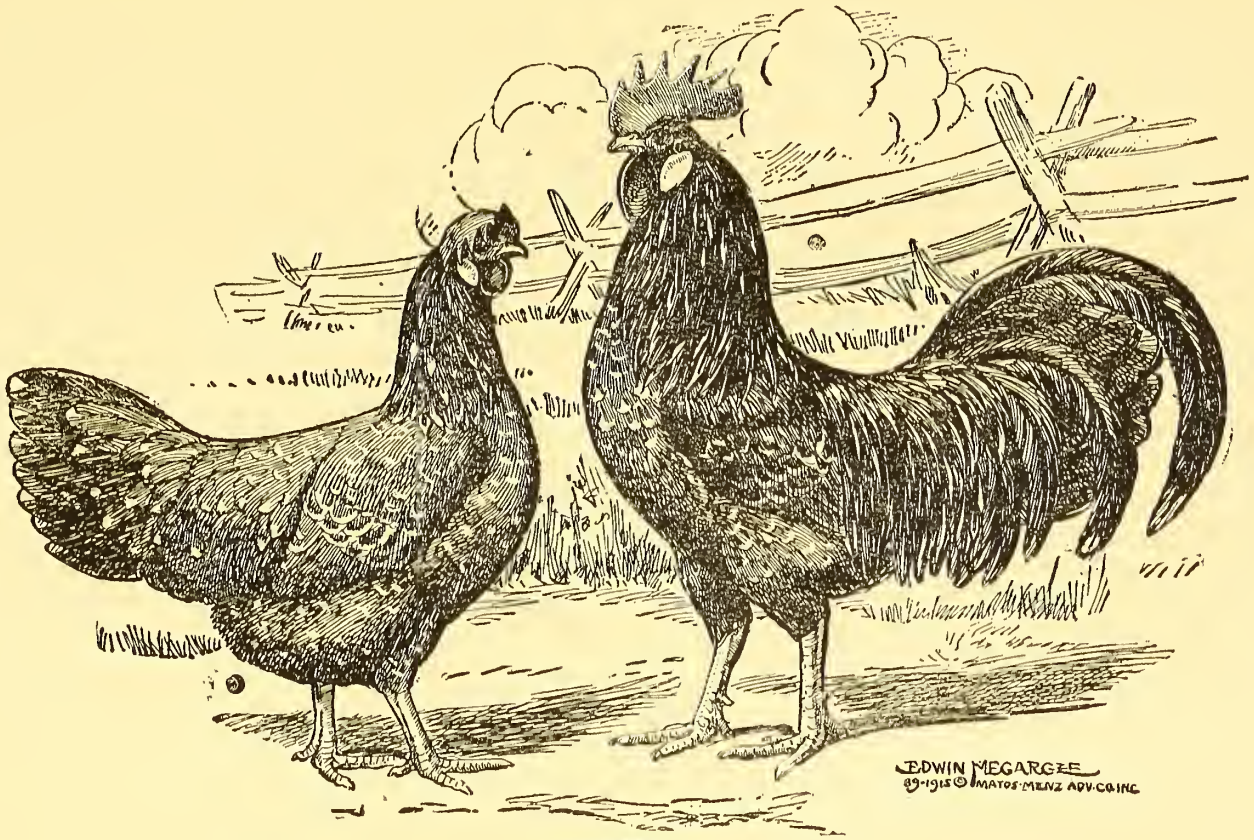
Classification as to Size and Sex—In the animal kingdom might makes right. The small one therefore has small chance to live—much less to grow when mixed up in close quarters with big brutal fellows that delight to spend most of their spare time in persecuting those that are inferior to them in strength.

Free range gives them all a chance. The small ones can flee for their lives. But in the back yard plants, and where many birds are being raised on the intensive principle, they should be studiously separated into flocks according to size. This will be better for the big fellows and much better for the smaller ones.

Cockerels should also be taken away from the pullets as soon as they begin to annoy them.

Eggs at Minimum Prices—Why should eggs be sold when they are a drug on the market? Why not preserve them for home use when eggs are bringing fifty per cent more? There are several simple processes for doing this at home where there is no cold storage privilege. Gather them often.

Prepare for the Fall Exhibits—No agency has done more for the poultry business than the poultry show—with the exception of the poultry journal. Nothing will give deeper interest and greater pleasure in your birds than to make ready some choice specimens for exhibition at the fall and winter shows. Midsummer is an excellent time to begin picking your winning birds. Study the standard and work daily toward it.



ANCONAS

Anconas

The Ancona, like its close relative, the Leghorn, came to us from Italy. It is a dainty, graceful fowl of nervous temperament and is famous because of the astonishing number of white-shelled eggs it produces. During the last two or three years this breed has won a host of friends in America. The plumage color is largely lustrous black, a certain number of feathers being tipped with white. This makes an odd and striking combination. Standard weight: cock, 5½; cockerel, 4½; hens, 4½; pullets, 3½ pounds.

A NEAR RELATIVE OF THE FAMOUS LEGHORNS

The Ancona is a comparatively recent addition to the long list of breeds of fowls bred in America, but it has already made its presence felt. It is being taken up by an ever-increasing circle of fanciers and utility poultrymen and seems to be making good.

Apparently, the first specimens of this speckled breed which were exported were taken to England from the port of Ancona. This seems to establish the origin of the breed name.

As previously intimated, the exhibition type of the Ancona is the same as that of the Leghorn. It has the same graceful curves and alert carriage.

The ground color of the plumage is lustrous, greenish black, twenty per cent. of the feathers being tipped with white. This mottling should be evenly distributed, something which is not easily accomplished. White also appears in the large feathers of tail and wings. The drawing shows the desired markings.

The bill is yellow, the upper mandible slightly marked with black. Shanks and toes are yellow, or yellow with black markings. The ear lobes are white; face, comb and wattles red.

Experienced breeders of Anconas state that these birds closely resemble Black Leghorns in habits and general characteristics. They are somewhat inclined to be wild and nervous, but these points are turned to good account when the stock has free range. They are hardy and great hustlers, items which are much in their favor.

Chapter XI

Advantages and Disadvantages of a New Breed

"Be not the first by whom the new is tried
Nor yet the last to lay the old aside."—Pope.

THOUSANDS of years ago a wise man said, "Of making many books there is no end." In like phrase we may truthfully say today, "Of making many breeds of chickens there is no end." Each issue from the press is quite likely to announce some new breed discovered. There literally seems to be "no end" to the matter.

The experienced hand may feel no sense of confusion because of such conditions. The novice, however, and the fancier of limited experience, may get to their wits' ends in trying to decide which is best and what to do.

The birds look so pretty in the pictures! We feel that we want them all. And the grand old breeds! What splendid things they are!

The first severe attack I had of "chicken fever" was caused by looking at a picture of a pen of Buff Cochins. I was sure that it was the only breed that would please me. I thought of them by day and dreamed of them by night. That was twenty years ago—but strange to say I have never yet owned a Buff Cochin fowl.

And the new breeds! So noble, so beautiful, so resistless—in the pictures! And when we get to the real birds we are not altogether disenchanted. They are exceedingly attractive, interesting—we can't help feeling that we would very much like to own them.

Well, what's the difference? A few suggestions on either side may assist some to make a wiser choice.

Novelty is the first advantage to be realized from a new breed. The instinct for the new thing is deeply fixed in every one of us. This is peculiarly true in America. If we observe it in the animals we call it curiosity. Squirrels have it in a very marked degree. Many a time it means death to the little creature. Certain kinds of deer are lured to their death thru their instinct of curiosity.

But a man is the most inquisitive animal in the world. It is the new thing above all things that he desires to know about. The new breed of fowls, therefore, he must have—just to find out what it is if nothing else. This makes the culture of them interesting, intensely so. I have handled many new breeds and always with the greatest pleasure.

But where curiosity is lifted to such heights of interest and expectation some disappointments may be looked for. The very fact that you are dealing with a new breed means that you are doing a work of development. The process of selection is just nicely begun. If you choose such a breed you assume a share of the responsibility of bringing it to perfection. This means time and sacrifice. The man who is surprised to find more culls in a new breed than in an old breed proves that he is what the West would call a "tender-foot." He has much to learn about the culture of fowls.

But to the true fancier this very element of uncertainty is a constant source of pleasure and interest. He is working with the definite understanding that a considerable percentage of the fowls he produces will not be up to the standard. The breed has not become established in shape, markings, etc., like the Cochins that have been bred to a certain type for half a century or more. For this very reason the man who handles a new breed will highly prize and appreciate the good specimens he does produce. It is not as tho the land were covered over, from Maine to California, with fowls equally good. This goes far toward reconciling him to the larger number of imperfect birds.

Another great advantage in handling a new breed is the boom that is almost certain to be on in their favor. This is illustrated in the Rhode Island Reds, the Orpingtons, the Columbian Plymouth Rocks, etc. People get to talking about the new production all over the country. This "boom" develops a desire to see the new fowls, and, if possible, to possess some of them. Of course the laying powers of the newly discovered bird are painted in brilliant colors—and no doubt justly—while the many other desirable points are duly heralded by enthusiastic admirers. This is beyond any question a very great advantage, especially to those who wish to make sale of standard bred fowls and their eggs for hatching.

And, as a rule, the best things that can be said about a new breed are not likely to result in disappointment. There can be no question that the latest fowl is likely to be the best fowl. This is true in everything. Compare the breeds that are at the front today with the breeds that were at the front the middle of the last century. You will discover that there has been great progress. Compare the "2:40" trotter of a generation ago with the king of the race course today. The poultry world has moved more rapidly than the horse world. The latest thing has wrapped up

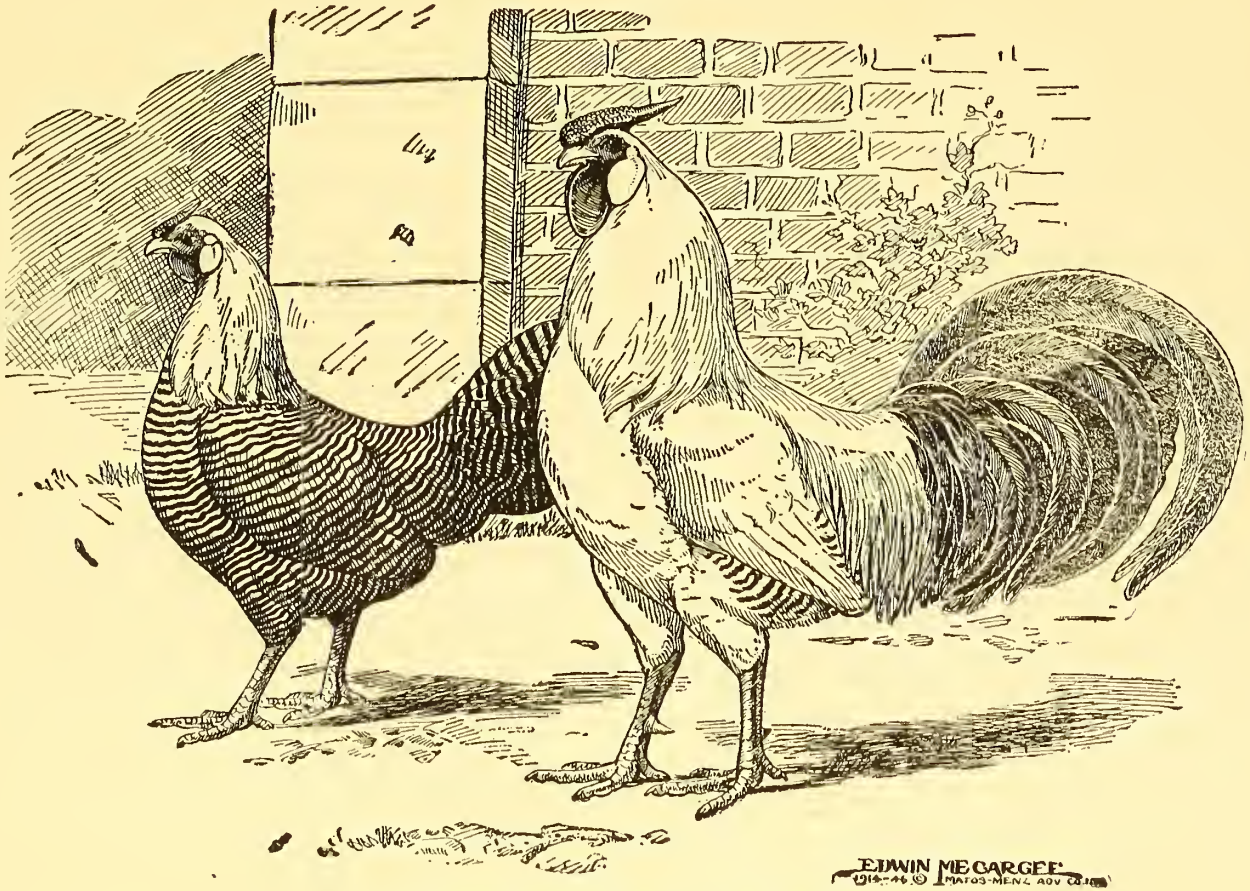
within it the sun of the ages. Queen Elizabeth said she felt the blood of a hundred kings in her veins, burning in anger or rising in pride. And so Joseph Parker said, "All past tributaries flow into the river of the last birth."

But after all there are large advantages in handling the old line breeds. If you want something permanent, something as sure as the sun, something that will make it possible for you to read in a book just what you may look for—and then "produce the goods" per printed program—invest your money in a pen of the old standard bred fowls. They will be your friends without a shadow of doubt if you treat them well. They will be with you for all there is in them twelve months of the year. Bred well, they will give a small percentage of poor birds—they will be even monotonously regular, orthodox, and decently behaved. The older the breed the more certain they will be to follow the program literally.

So I believe in the old as well as in the new; but I have to confess that I am just enough of an American to like the dashing new breed a little better. The tallow dip was quite an improvement over the old torch of pitch pine. The kerosene lamp put the "dip" to utter shame. The gas-jet was another leap in advance in the process of illuminating this world. But all these forms of illumination are rapidly becoming antique curiosities in the presence of the modern electric light.

We Americans are looking for the "electric hen." In order to find her we must not be content with present achievements, however beautiful and satisfactory. The true American is always searching for an improvement on what he already has. The Wright brothers were not content with automobiles, parlor cars, and ocean liners; they must navigate the air. That is the spirit of the true fancier. You can't satisfy him. I repeat it—he is absolutely unsatisfiable. You can't convince him that we have yet bred the best fowl. To him the best fowl is in the next century, and he is going to move toward it as rapidly as possible.

And yet I would not say that splendid progress may not be made in the improvement of the old breeds. I have noted nearly as much difference in the different "strains" of the same breed as between some of the different breeds. In this business "there's good fighting all along the line." The question is, **Who is ready to do the fighting for the best fowls?** Who is ready to dig into the mysteries of this great work that we have in hand with the patience and persistence of a McCormick or an Edison?



SILVER PENCILED HAMBURGS

Silver Penciled Hamburgs

The penciled varieties of the Hamburg breed originated in Holland long ago, and because of their unusual ability as layers became generally known as the "Dutch every-day layers." The silver penciled variety is probably the original kind, the others being developed later. These fowls are small in size, are hardy and active and are good producers of white-shelled eggs of medium size. The plumage color is black and white, marked as shown in the accompanying drawing. This attractive color scheme, combined with grace of form, appeals to all lovers of beautiful fowls.

AN OLD-TIME FAVORITE

There are six recognized varieties of the Hamburg breed, and while these probably have a common origin, they were not all developed in the same country. The spangled and black varieties were brought to perfection in England, while the penciled varieties hail from the Netherlands.

Just why these latter kinds are called "penciled" is difficult to understand, excepting on the assumption that the usage of the term has changed since it was applied to them. Their plumage is barred, not penciled; but no true Hamburg fancier would ever consent to have the time-honored name altered. In former years, before the breed name had been fixed, the Hamburgs were known under a wide range of names, as Everlasting Layers, Dutch Everyday Layers, etc. Of course these were given in recognition of the marked tendency toward heavy egg production, which was early manifested by fowls of this kind.

The eggs are medium in size and white-shelled. Hamburg hens are non-sitters, an advantage from the standpoint of egg production.

One of the most distinctive points of the breed is the comb. This is of the double or rose type, is beautiful in shape and contributes in no small degree to the charm and elegance of this surpassingly beautiful fowl. Some other fowls, notably the Rose Comb Bantam and rose-combed varieties of the Leghorn, have somewhat similar head gear, but this is due to an infusion of the Hamburg blood.

One of the most pleasing characteristics of this breed is its tendency to breed true to type. This means a low percentage of wasters or culls, birds which are not worthy of being retained in the flock. It can be said that few, if any other breeds equal the Hamburg in this important respect.

Silver Penciled Hamburgs, like all other varieties of the breed, are small in size and remarkably beautiful in form. Their general contour and carriage somewhat resemble that of the Leghorn, although they are far more elegant than the latter breed.

In color, the body plumage of the male is white. The tail is black, the sickles and coverts being edged with a narrow band of white. Wing primaries are white; secondaries, white and black. A few black bars appear on the sides of the body below the wings.

The female is clothed differently. Her neck is white, a few black bars appearing at the base, and the rest of her plumage is white, each feather barred with narrow bands of black.

In both sexes the comb, face, wattles and eyes are red; ear lobes, white; beak, horn color; shanks and toes, leaden blue.

Chapter XII

The Poultry Show---A Dynamo of Inspiration

"The strength of the Pack is the wolf—
And the strength of the wolf is the Pack." —*Kipling.*

WE MUST not let slip this mighty dynamo of inspiration. Without it we will all lose much of our high power enthusiasm. With it, rightly handled, we are bound to achieve larger things every year and reach higher levels of value in the culture of fowls.

The poultry show is the amateur's opportunity. It is his only open door into the ranks of the high class breeders. The amateur who has no poultry exhibitions in which to study the splendid achievements of other men of larger experience, and therefore no place to compare his work with the work of the expert, cannot possibly make the progress that he ought to make in the culture of high class fowls.

The people are beginning to appreciate the value of the county fair. It brings the producers together from many miles about. The man who has been moving along on a low plane, thinking that he has been doing big things while really he has been making use of only a paltry twenty per cent of his possibilities, comes to the county fair and sees how far in advance of him his fellow citizen of the next township is. He gets an inspiration to do larger things, and goes home resolved to go to that fair next year as one of the high class exhibitors.

He did not know. The exhibition "put him wise."

So it is with the poultry show. It is the greatest generator of enthusiasm that the amateur can come in contact with in the same length of time. It is also the greatest "eye-opener" to the real situation. How can the beginner know what he is doing, how can he know what his fowls really are, if he has no opportunity to place them in competition with those of others?

We all remember when we were breeding the best birds we could, and we were hoping that they were high class stock; but we were unable to know much about what we were doing because we did not bring them into competition, under competent and licensed judges, with the finest product of other breeders in the county, and the state, and the nation. The annual exhibition was our only chance to get our bearings and reach the ranks of the real breeders of high class birds.

The poultry show is the expert's field of glory. If he drops out of it a few seasons his achievements will be largely forgotten by the public. Of course the man who has been many years a successful breeder with a national reputation sometimes takes a year or two of rest from the show business. But this man knows very well that the public exhibition of his fowls gave him his first "spurs" and he knows just as well that if he stops exhibiting, the public will soon forget that he ever had any reputation as a breeder of fine birds.

However successful a breeder may have been in the past, he knows that just as big men as he are likely to forge to the front with fowls just as nice as he himself can raise. These men will be at the show to win their early ribbons. The veteran breeder must never leave his field of glory—or all the glory that he ever won in the show room will fade away in the brilliant light of these new Napoleons.

The man who ceases to show will immediately begin to go the back track. Things move rapidly in this mighty twentieth century. Even the expert himself, of many years of brilliant reputation, will find that he must be eternally on the job or a score of new men will be there to filch from him his great name by showing better and bigger birds.

It does not take a breeder long to become a back number in these times. Just let him drop out of the show room and he will soon get his classification—a "has been."

The poultry exhibition is therefore the advertising background for any one who desires to do large things with thorobred stock. The man who can't quote victories won at some show of more or less consequence has practically nothing to back his claims. He may have the best fowls on the continent; but the buying public cannot take his word for it. He is supposed to be prejudiced in his own favor. They will judge him and his fowls almost exclusively on the records those fowls have made in competition with others.

Thousands are advertising thorobred birds without show records and are doing well on a small scale. But the man who is ambitious to get big prices for his birds and his eggs must prove by his records that he has eggs and birds that are worth big prices.

It is one thing to sell hatching eggs at a dollar a sitting. This is only a fraction above the common market price for fancy eating eggs. It is quite another proposition to command from three to twenty-five times that price. This latter comes only after a hard battle and a glorious victory in the show room in competition with hundreds of the best specimens from our forty-eight great states. Such a victory gives a man a background for an advertisement that

will compel attention from the Atlantic to the Pacific —an advertisement that he will be able to pay for.

The show is also a marvelous public promoting power. Every man who comes to a poultry exhibition of any worth at all will go home singing the praises of nice fowls and burning in his soul to own some.

This is a thing that our country needs today. Thousands of young people are coming to the front every year to take the places of the older ones who are retiring, or to take new places. This new generation needs the thrill of the finest poultry exhibitions.

The "morale" of the public in relation to poultry culture must be maintained or our business will soon flatten out to the condition of a generation ago when the man who talked seriously about keeping fowls as a work of any consequence ran a dangerous risk of being laughed at as a simpleton. The exhibition of the finest fowls will prove to the public, as nothing else can, the worth of our business.

Every calling has had to fight its way to the front by proving its worth to the public. This can be done only by inviting the public to look upon the best products.

"By their fruits ye shall know them." It is true in poultry culture as well as in personal character. The poultry exhibit assembles the finest products of a county, a state, or of a nation. In this way the public see the best that has been done and are convinced.

The average man who has never studied poultry keeping according to modern methods is densely ignorant concerning the whole proposition. It is amazing how little even a highly educated man can know about the different breeds of fowls and the best way to handle them! It is true that the general public has made great improvement along these lines during the last quarter of a century. But there are thousands of people who do not know a Light Brahma from a Leghorn. They are as ignorant as children about the things of the poultry yard—things that are as familiar to us as our A. B. C's.

To such people the poultry show comes as a revelation. The finest specimens of every breed are there side by side. Eggs of all kinds and sizes and colors are on exhibition also, incubators and brooders and a great variety of most ingenious mechanisms for saving labor in the down-to-date poultry plant. Besides all this, experts are present with whom the public can converse, thus learning a great deal at first hand, while poultry papers and catalogues from all sections of the country are freely distributed.

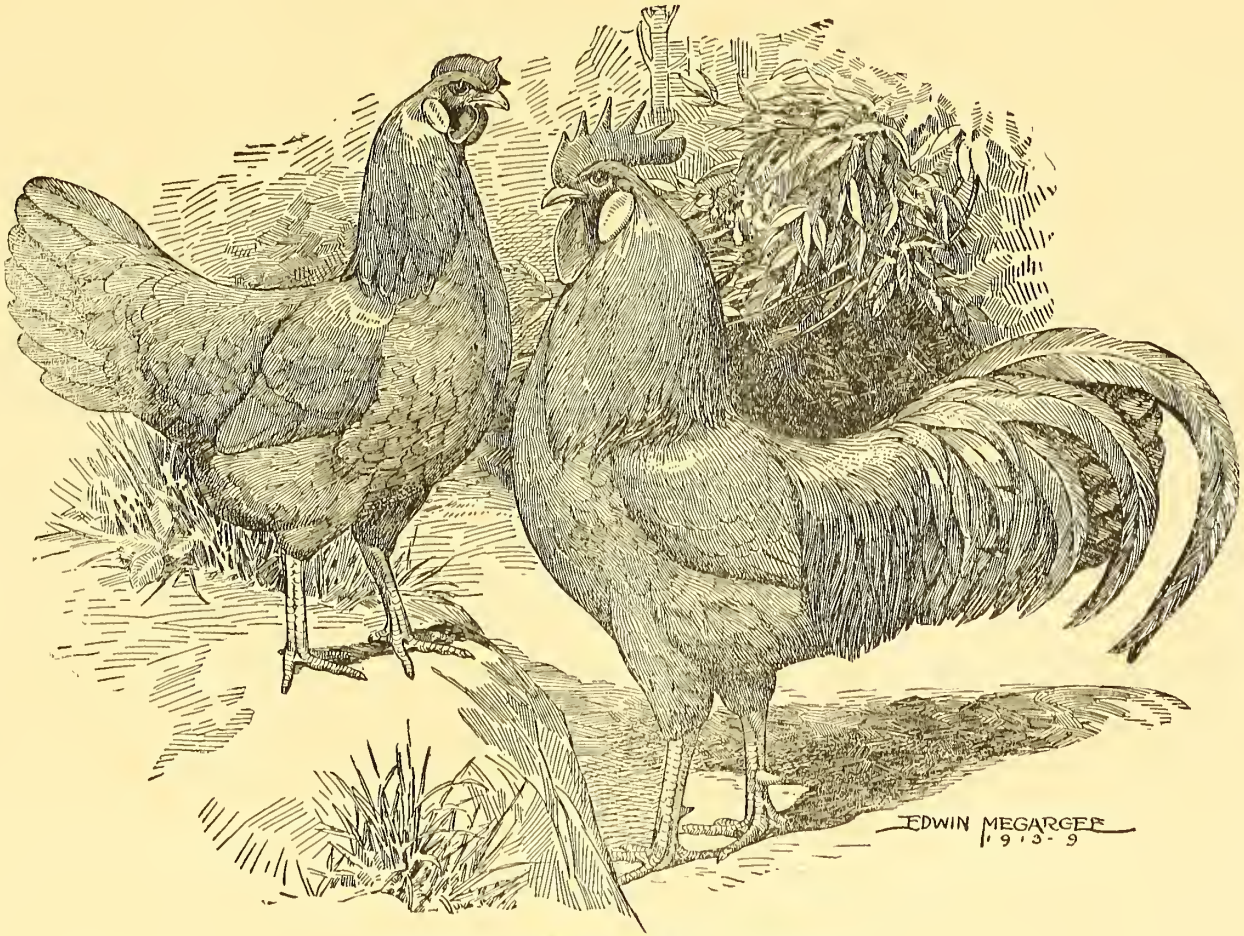
A poultry show that is what it ought to be will be a thing of beauty thruout. We have all visited country fairs where the equipment for the poultry exhibits was most grotesque, outlandish, utterly lacking in everything that might add beauty. The master paintings of the world would look like worthless daubs in such unpropitious settings.

There is nothing more beautiful than our most beautiful fowls. Give them the right frame in which to stand and they will capture the zealous admiration of every one who looks upon them. But put them where everything about them is most unwelcome to the eye of the passing public and their good looks are largely lost.

The handsomest woman in the world can destroy much of her beauty or multiply it tenfold, according to the clothes she wears and the surroundings under which she poses.

If we want our poultry shows to do their best work for Uncle Sam and for the poultry fraternity special care must be given to exhibiting the birds under the most favorable environment in order that the very best effect may be produced on the observing public. The ancient, decaying, unpainted, most unattractive cages should be shunted to the bonfire. They should not be permitted in the show room. They give a black eye to the whole exhibition. Beautiful coops are advertised in every poultry journal. A few dollars invested in them will be returned with big interest to any exhibitor.

Every poultryman should make the most of the poultry show. Without it the whole business of raising thorobred stock will go to the wall. The fancy demands it as its life blood. Every keeper of fine fowls needs it to hold his zeal at white heat and his ideals level and clear and sufficiently high. We rise or fall largely with this great modern dynamo of intelligence and inspiration.



SINGLE COMB BUFF LEGHORNS

Single Comb Buff Leghorns

Yellow Leghorns have long been known in Italy, and from this variety the modern Buff Leghorn is descended. It reached America via England, where the original type was vastly improved. In the hands of American breeders it has reached its present state of perfection. The Buff is a typical Leghorn in body conformation. Note the illustration above. Its plumage is rich, golden buff throughout, both surface and undercolor. Freedom from shafting and mealiness is most essential. Bill, shanks and toes are yellow. Eyes, red. The hens are non-sitters and are wonderfully prolific, their eggs being large in size and white-shelled. Buff Leghorns are a particular attractive variety of a wonderful breed. Standard weights: cock, 5½ pounds; cockerel, 4½ pounds; hen, 4 pounds; pullet, 3½ pounds.

A BEAUTIFUL MEMBER OF THE LEGHORN FAMILY

During the twenty-five centuries of poultry keeping in Italy, some wonderful breeds of fowls have been developed there. Of these, the Leghorn enjoys the greatest popularity in America. We have several distinct varieties of the breed, as the White, Brown, Black, Buff and Silver, all of which have been perfected since they left their native country.

The first three varieties mentioned came to America direct from Italy. The Buff variety—formerly known as the Yellow—first went to Denmark, thence to England, and from the latter country reached us.

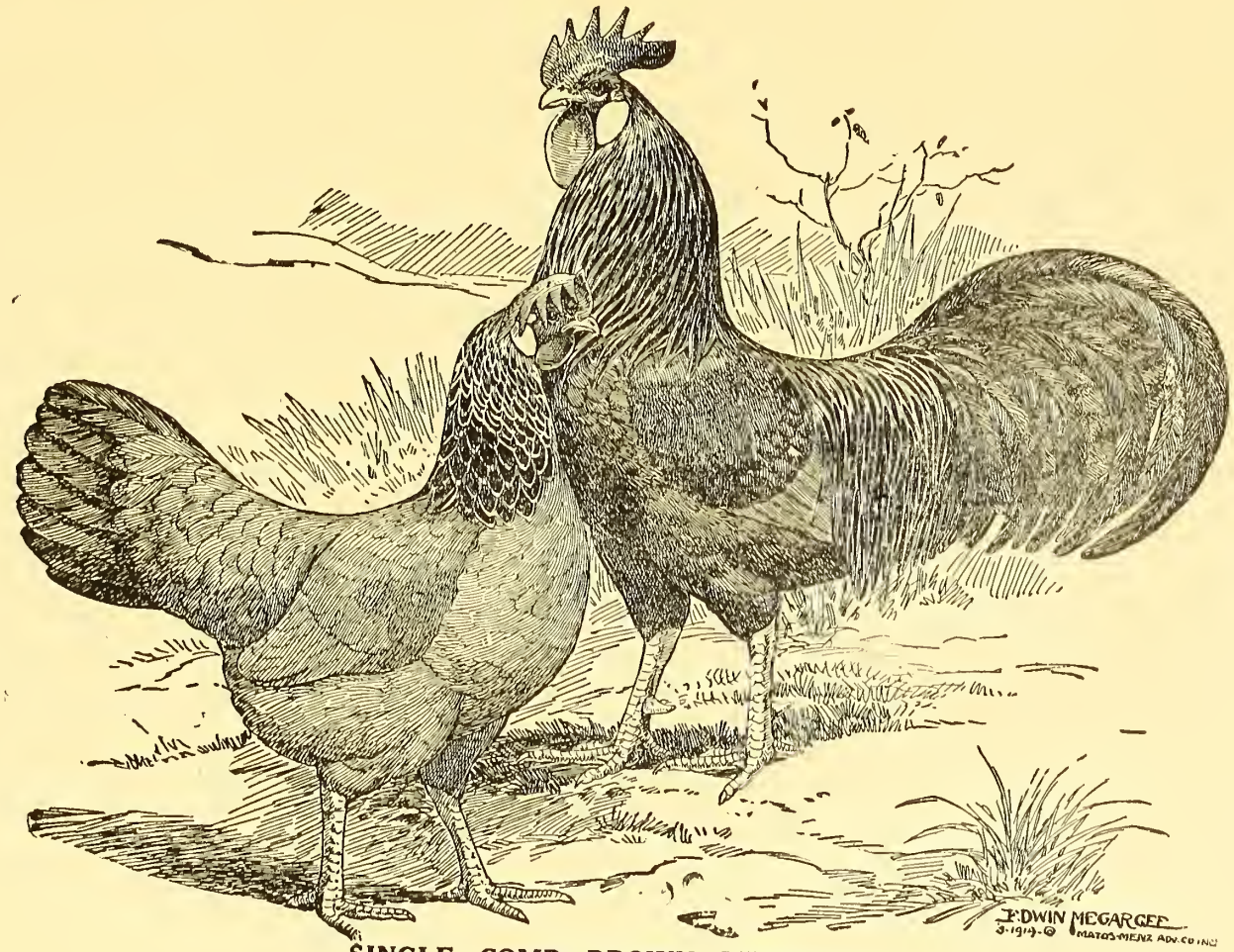
English breeders apparently took the first steps in improving the Buffs. The first specimens imported were decidedly inferior in color. Mrs. Lister Kay secured some of these and by the introduction of Buff Cochin blood finally produced the desired shade of buff color. It was this strain which was later brought to the United States.

In the hands of American breeders the variety has been tremendously improved, and it is fair to say that the Buffs now rival the Whites in perfection of type. While they do not equal the latter in popularity, this is due solely to the difficulty of producing the proper shade of color, and is no reflection on their beauty or utility value. However, in the larger poultry shows one now sees very strong classes of these handsome birds.

Buff Leghorns should conform to the shape standard of the breed in every particular. Note the illustration which shows the desired type.

The color is as follows: eyes, face, comb and wattles, bright red. Ear lobes, white. Beak, shanks and toes, yellow. The plumage in every section should be an even shade of rich, golden buff, without mealiness, shafting or any foreign color. The undercolor should be buff, lighter than the surface.

The Buff Leghorns have many desirable utility characteristics. They are splendid layers, their eggs being large and white. Being non-sitters, they attend strictly to the business of egg production. They are hardy and active, being great rustlers when given a chance to range. Though light in weight, they dress off beautifully, being full breasted and of the desired color. The poultryman who wishes to breed fowls which combine beauty and the production of great numbers of white-shelled eggs for market will do well to give this variety careful consideration.



SINGLE COMB BROWN LEGHORNS

Single Comb Brown Leghorns

Introduced to America direct from its home in Italy about the middle of the last century, the Brown Leghorn soon became most popular and is still the idol of a great host of breeders. The plumage color is a mixture of glossy black, red and brown, a combination which is rich and beautiful. The Brown Leghorn is also profitable in a commercial way, as the females are great producers of large, white eggs. The desired type is clearly shown in the accompanying drawing. Standard weights: cock, 5½ pounds; cockerel, 4½ pounds; hen, 4 pounds; pullet, 3½ pounds.

A BEAUTIFUL EGG MACHINE

As is the case with practically all of the older breeds of poultry, and, unfortunately, many of the newer kinds, authorities differ regarding the history of the Single Comb Brown Leghorn in America. Some claim that it was first introduced into this country in 1835; others, that the original importation reached us in 1853. Furthermore, there has been much discussion as to whether the early stock had red or white ear lobes and single or rose combs.

However, these varying claims are relatively unimportant. It is sufficient to say that the Brown Leghorn reached us not later than 1853, that it immediately made a place for itself and that it still holds its well-deserved popularity. It is quite probable that these birds came to us direct from their native home in Italy and that the English breeders secured their first Leghorns from America.

Most well-informed breeders of Brown Leghorns admit that the blood of other breeds was early introduced to improve the plumage color. Black Red Games were used for this purpose, and Black Minorcas were later crossed in to enlarge and whiten the ear lobes. While these crosses produced the desired effect, they also worked injury to the breed type, and to this day the Brown Leghorn is still behind some of the other varieties in this respect.

In rich beauty of color and markings, the Single Comb Brown Leghorn ranks very high, contesting with the Hamburgs for the honor of standing at the head of the list.

The plumage color is simply exquisite. In the male, the neck, back and saddle are a rich, deep red, each feather striped with glossy black in hackle and saddle. Breast, body and fluff are black, with a greenish sheen. The wing-bow is red, wing-bar black, wing-bay rich brown; sickle and tail coverts are black.

The color of the female is more modest, but is none the less beautiful. Her hackle feathers are golden yellow, striped with black. The beautiful salmon-colored breast blends into the brown fluff.

Aside from black main tail feathers, the rest of her plumage is light brown, evenly stippled with a darker shade of brown. This color should be absolutely even, and constitutes the chief beauty of the Brown Leghorn female.

In both sexes the shanks are yellow, the face, comb and wattles red, the ear lobes white.

This variety should have the graceful, active, alert carriage of the typical Leghorn, which, added to its unusual charm of color, makes it indescribably attractive.

When we consider that this variety ranks among the leaders in beauty and that the females are unusually prolific layers, one understands why it is extremely popular and wonders why it is not even more extensively bred.

Chapter XIII

Visit the Down-to-Date Plant

"Crazy People never pull Together"

AGAIN let us remind ourselves that things are moving fast in the poultry world. You will have to be quick and eternally on the alert if you keep up.

Methods of fifteen years ago are distinctly behind the times today. You must not only study the advertisements most diligently, but you will have to go and see what is being done and how it is being done. Otherwise you will be handicapped in this business race.

First hand information is what you need. It is what the genius for business will have. A visit to the down-to-date plant will furnish you with an opportunity to get it. You can afford to invest a few dollars in a trip now and then to poultry farms that are doing things.

The personal interview is of vital value. It is well to talk with the man who has "turned the trick." If he has beaten you, go right to him personally. Get the glint of his eye. Hear the tones of his voice. Watch his movements. There is probably something about his personality that has given him the lead of you. Study his initiative. It will be revealed in the way he speaks and in the directness with which he goes to the heart of a proposition. Let him mold you to his way of thinking, to his point of view, to his breadth of vision.

If Benjamin Franklin could have talked a few hours with Marconi and Edison it might have placed him a hundred years in advance of his age. Personally interview the poultry wizards. Half a day with one of them may add years to your information and your experience. It may transform your business from a failure to a success.

The study of means and methods is very important. You can't do this rightly unless you visit the plant where the most efficient means and methods are employed.

Books are of priceless value. Poultry journals are an essential part of a man's equipment—as much as his poultry houses. But the study of means and methods at the present moment in actual and successful operation must go along with these.

Theory can be gotten by the yard from ten thousand printed pages now—and such information is invaluable to any poultryman. But a personal observation of methods in operation on successful plants is just as invaluable.

The airplane has revolutionized warfare. Why? Because it enables the war scout to make personal observations as to what the enemy is doing. We need to go out scouting and discover how the successful poultrymen get the goods and the sales that we would like to get.

China sent her greatest statesman, Li-Hung-Chang to the United States to study our system of government. It was the beginning of a new day in that belated old empire. Study the means and methods of the fellow who has sprinted ahead of you. It may mean a "new day" for your business.

I saw a successful poultryman take 4,300 chicks, one day old, out of a giant hatching machine. That poultryman was running two of those immense incubating machines. Twelve thousand eggs was his total capacity. He is running a 1500-hen farm on ten acres of land. There was not even a suggestion of failure on any part of the plant. Everything was done with the business promptness and the scientific thoroness of a great department store.

Half a day spent on such a plant would be worth hundreds of dollars to many a poultryman's business. Get this sort of first-hand information by an actual study, on the grounds, of the methods and means that are today proving successful.

There is need of light on the problems of location and markets. This is an immensely important part of the poultryman's puzzling propositions. It makes a vast difference whether a man's business is located on a mountain top hundreds of miles from anywhere. Ask the merchant. A favorite corner on a principal thorofare may mean Success with a big "S", while just as good a building on an unfrequented side street may mean Failure with a big "F".

Study the down-to-date plant therefore with respect to climate, soil, water privileges, possibilities of fruit culture, and so on.

Equally important is the convenience to excellent markets. It must never be forgotten that the getting of birds and eggs is only half the battle. The larger half in fact is the profitable selling of the goods after you have gotten them.

With present railroad communications there is no need that a man should conduct a poultry business in some out-of-the-way locality where he is constantly handicapped by inaccessible markets. This is a big country. We are not cramped for room as they are in the age-old nations of Europe and Asia. Take your choice! There are thousands of acres waiting for your proprietorship. They are just what you need. If you are going to do big things in the poultry business, search for the right location and markets.

Rub two steel blades together and each will become sharper. Every time two business men meet and discuss their problems each imparts to the other a certain degree of **Creative Inspiration.** Visit the down-to-date plant with this specially in mind. "Connect up" with some powerful human dynamo of business achievement as often as you can, and let him charge your soul with as large a measure of inspiration along your particular line as it is safe for you to carry.

Most of us **know** enough to succeed but we lose heart. We need to see what others are doing and have done, and so catch a vision of the possibilities before us if we will only "go and do likewise." Wise men everywhere recognize the value of this principle. Professional men of every stamp meet in their stated gatherings, many of them every week, and each one catches a new power of light and hope and energy.

Poultrymen come together in their local organizations and in their great annual national conventions, and they come back to their business with a new power to do things. The poultry show has done much in this way. But more valuable I believe than any of these things is a thoro personal study and inspection of a well equipped and successful poultry plant in actual operation.

A manufacturer will learn more at the factory than at the store. He's a producer. He can learn most, therefore, where his kind of goods is produced. So the poultryman is a producer. He will do well to study the "**modus operandi**" of the most successful chicken factories.

His great need is not so much to see chickens as to see how they are made. The aspiring young dairyman would do well to visit a butter store; but better yet it will be for him to visit and thoroly study a down-to-date dairy farm. A hundred fold more inspiration will come to him from such a visit than could possibly come from seeing the grandest exhibit of dairy products in America.

The inspiration of "Seeing," and therefore "Believing," is worth a great deal to a man.

Man is imitative. Reynolds, the great painter, always avoided looking at a bad picture. He studied the best works of art. They gave him example, and, above all things, **Inspiration.**

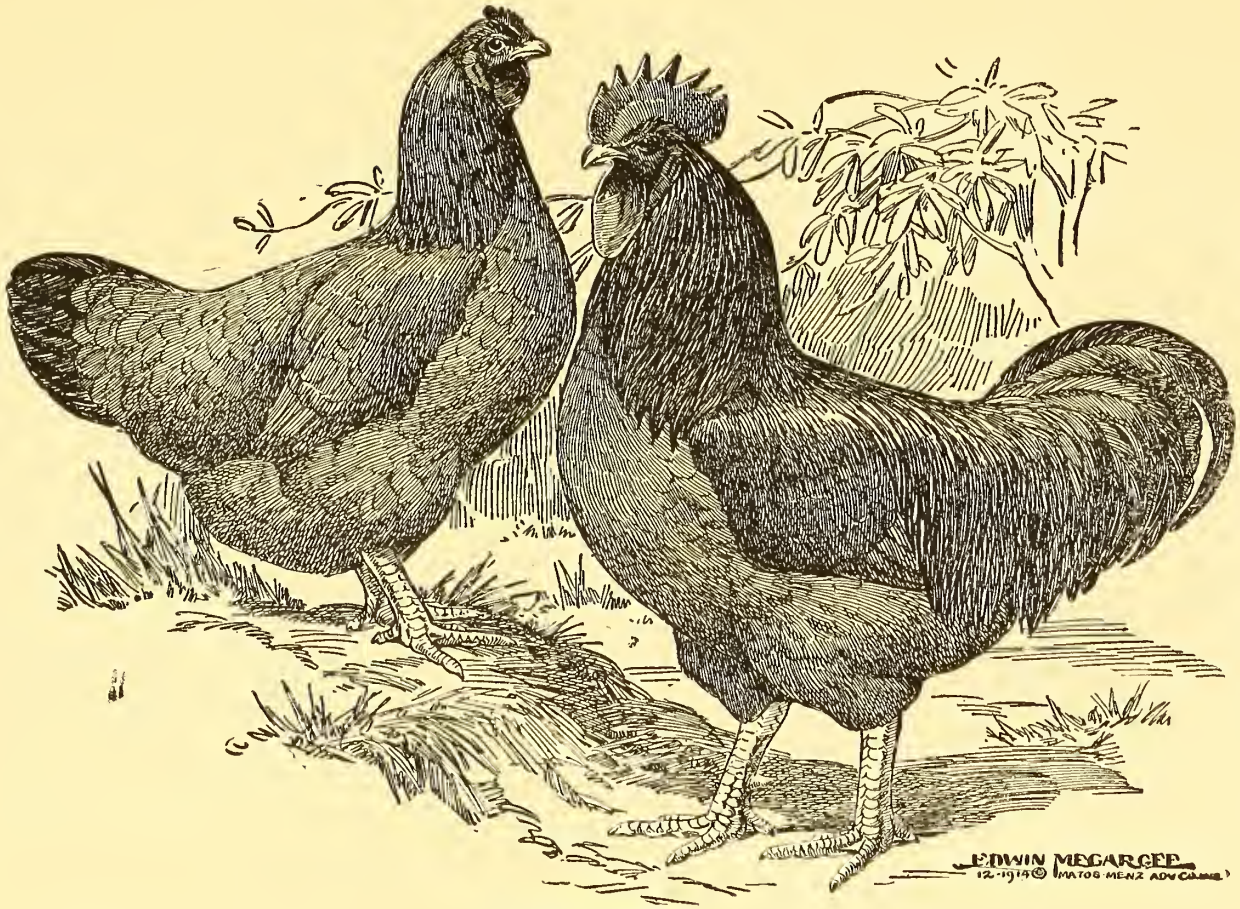
Without this enthusiasm of inspiration, success that is worth while is out of reach. Napoleon called it the "Thunderbolt." He always used it in battle when possible. If he could fire his soldiers with a sufficient voltage of enthusiasm he could sweep down any foe.

One of the greatest needs of the average poultryman is the **inspiration of example.** He must come into touch with poultrymen who are doing actual business operations that are on the face of them successful. A little time and money spent in this manner will bring in a larger dividend than ten times as much invested in methods that have become obsolete.

The man referred to above told me that the year before he gathered an average of 167 eggs per hen from his flock of 1500 layers. Then he spent an hour or two with me showing me every part of his plant and just how he was doing such a thriving business.

When I saw 250 splendid layers in each pen; and literally thousands of youngsters from one week to three months old, every individual healthy, hearty and happy—when I saw how clean everything was kept, not an unpleasant odor on the place—when I inspected his laying stock and found them in splendid form, alert, vigorous, full of energy and then when I turned to the poultryman himself and saw with what cheer and confidence, and energy and intelligence, he went about his business, I was not surprised to learn that he was really conducting a very successful financial proposition.

That is the kind of exhibition for a discouraged poultryman to visit—even at the cost of a few dollars in car fare. **First-hand information** and **Creative Inspiration,** can be gathered at such a place faster and at less cost and effort than in any other way I know of. Therefore, I close as I began, "**Visit the Down-to-Date Plant.**"



RED SUSSEX

Red Sussex

The poultry breeders of England have produced some kinds of fowls which have, through sheer merit, earned wide popularity in America. Just at this time our poultrymen are becoming interested in the Sussex, an old English breed, which ranks high among general purpose fowls. The Red Sussex is the most beautiful variety of the breed, in color being a rich mahogany red, with glossy-black appearing in certain sections of the plumage. Sussex fowls are especially valuable to the producer of table poultry, being of highest quality. The hens are excellent layers of brown-shelled eggs. Standard weights: cock, 9 pounds; cockerel, 7½ pounds; hen, 7 pounds; pullet 6 pounds.

AN ANCIENT ENGLISH FOWL

At frequent intervals we hear of some energetic American poultryman "discovering" and importing from other lands, breeds of poultry which are claimed to possess marvelous qualities. Many of these fail to live up to their reputations. Others make good under our conditions and earn for themselves permanent positions among the popular breeds.

We know that many kinds of fowls still strangers to us have long been widely bred in other countries. It is quite probable that it would be to our advantage to use certain of these in the place of some breeds which we now regard with favor. But the veteran poultryman, after seeing the rise and fall of many foreign breeds, usually assumes the "show-me" attitude and suspends judgment until each newcomer has shown by actual performance in America that it is entitled to recognition.

The Sussex breed is an ancient one, and in its native home in the Sussex district of England, has for years untold stood high in the estimation of commercial poultry growers, though fanciers paid but scant attention to it until recently.

In fact, the history of this breed is not unlike that of our own Rhode Island Reds, which for a half century was the favorite fowl of an important poultry district, but did not become widely popular until after it was taken up by breeders, who bred it to a definite standard and heralded its great value all over the country.

The Sussex fowl has been bred by the farmers of Sussex, England, for a long period of time. Just how long, no one can say. In 1903 the English Sussex Club was organized, and since that date great progress has been made in perfecting the breed and fixing definite characteristics. At the last meeting of the American Poultry Association the breed was admitted to our Standard of Perfection, and it will undoubtedly be immediately taken up by a large number of poultrymen on this side of the Atlantic.

Sussex fowls are typical general purpose birds, being particularly fine table stock and excellent layers of brown-shelled eggs. At home they are regarded as being unusually hardy and vigorous and they seem to retain these valuable characteristics under American conditions.

The Red Sussex is illustrated herewith. It will be noted that the body is long and deep, with sloping carriage.

The plumage color is a beautiful shade of rich mahogany red, even deeper and richer than that of our favorite Rhode Island Red. Possibly the fact that the standard for the Red Sussex permits slate undercolor may explain the greater strength of the surface color.

In both sexes the tail is rich glossy black and the hackle feathers are striped with black. The whole effect is unusually rich and striking. Of course, it is permissible that the top color of the male be of a slightly darker shade than the body color.

Face, comb, wattles, ear lobes and eyes are red. Beak and shanks pinkish white.

The Red Sussex is well worthy of a thorough trial in this country, especially at the hands of that great body of poultrymen who believe that we should greatly improve the quality of our table stock.

Chapter XIV

Selection and Care of Breeding Stock

"Those who are best loved by the angels receive not a throne but a task."

THE selection and care of the breeding stock must command the closest attention, or great losses will result. Studious and systematic thought in this matter in December and on thru the winter may be the "stitch in time"—which may save not only "nine," but ninety, or ten times ninety the next season.

"Whatsoever a man soweth that shall he also reap," will hold just as true in producing chickens as in building a character. The wise poultryman keeps this subject just where it belongs—at the very head of the list.

The selection of the breeding stock is the crucial point to begin with. In the open fields and forests the birds have a way of attending to this matter most skillfully. The cock bird with the strongest wing, the most piercing eye, the most powerful and sword-like beak, and a movement most closely akin to a flash of lightning, is the one which nature selects to be the parent of the next generation. The female most shapely in form, most winsome in personality, most beautiful in plumage—most eminently fitted in every way to be the mother of a better race of birds—is the one that nature selects to breed with the champion "cock of the walk."

This great principle of the "survival of the fittest" or, rather, the survival of the strongest, the most vigorous, should be studied with the utmost care. In nature it is the working out of instinct—and instinct makes few mistakes. In the breeding of domestic fowls human reason is substituted for animal instinct. It is therefore for the poultryman to make the wise matings between the choicest, the most vigorous birds in his yards.

Many questions are involved. A very beautiful and well formed bird may be decidedly lacking in vigor. The balancing of these desirable qualities demands the keenest judgment. It demands the highest quality of decision of character. It is the supreme test of a man's genius in the breeding of good poultry.

It takes great courage to put aside the bird that would score above ninety in the show room, and breed from a bird that would score in the low eighties—just because the former is a lazy drone and the latter is a steam engine of physical vitality. But drones will produce drones—and by the third generation your flock will not be worth the picking. On the other hand, steam engines in feathers will produce steam engines in feathers—and by the third or fourth generation you will have a flock that can compete against the world.

Keep the **American Standard of Perfection** always before you as your ultimate aim, therefore, but never forget that every time you sacrifice physical vigor, in your breeding stock you surrender the very thing without which you can never attain to the true standard of perfection.

No bird that has ever been sick should be put into the breeding pen. No bird that does not stand well under the Hogan physical test should be given room in the breeding pen. Combs, wattles, color, shape, size, may be well up to the standard; but if the bird is weakly, inactive, a poor eater, now and then in the "hospital," he is certainly not a safe bird to become the father of your next year's flock.

How much wiser to pay ten dollars for new blood, or twice ten dollars, rather than take the risk with a bird of such uncertain stamina! To breed from a weakling may damage the flock hundreds of dollars in one season. To breed from a brand new bird of powerful stamina and splendid antecedents may add hundreds of dollars to the value of your flock in one season.

All this is true in the males and females alike.

What shall the breeding stock be fed? One well known poultry farm company, claiming to be the "World's Biggest Poultry Institution," has a capacity of over 2,000,000 day old chicks in twelve months. They claim a present capacity of producing 4,000,000 eggs annually. This great company has before it the ideal of establishing and operating a poultry breeding business that shall compare in reasonable degree with other great mercantile enterprises.

Having before them the production of eggs primarily for hatching hundreds of thousands of day-old chicks and for the supply of an immense market for hatching eggs by the setting or by the hundred, it is very evident that the subject of the feeding and the care and the selection of their breeding stock is worthy of the most thoro study. They sent me the following statement as to their methods of feeding:—

> "We feed somewhat after the plan as practiced by Prof. Gowell of Orono; but do not use the forcing measures advocated by him. In our feeding there are three main factors: **Succulent green food, animal food,** and grains. Should we be asked which is the most important of these factors, we should have to say green food, or if asked which of the three we would leave out, if any, should say grain. But the best results are obtained by a judicious combination of the three.
>
> "Our feeding begins at daylight, at which time

we feed to 100 hens five quarts of cracked corn. We prefer the corn cracked, as we have found that whole corn does not induce sufficient exercise, and exercise is one of the most important requirements in the successful handling of stock.

"At about 9:30 A. M. the attendant distributes the mash to each pen, which is fed dry, and is made up as follows: One hundred bran, two hundred middlings, two hundred corn meal, two hundred ground oats, two hundred beef scraps, fifty gluten meal, fifty linseed meal, fifty alfalfa meal. This mash is kept in hoppers before the hens at all times.

"At 11:00 A. M. we feed to each pen one and one half quarts of wheat and one and one half quarts of oats.

"At 1:00 P. M. we place in each pen its allotment of green food, consisting of about five pounds of clover and one large or two small mangel beets, turnips or cabbage.

"Just before dark a further feed of grain, consisting of one and one half quarts of wheat and one and one half of oats is given each pen, and this concludes the feeding for the day."

This is the winter daily program of feeding. Of course oyster shells, grit, charcoal, dry cracked bone, etc., are kept before the fowls all the time. The grain is all fed in litter to induce exercise, which, they say, "cannot be harped on too much." Emphasis on the importance of green food for breeding stock is repeated several times.

These people have been experimenting on another daily ration with a view to increasing egg production and fertility without lessening vitality. This is as follows:—

"Morning feed—100 hens, seven quarts of cracked corn, wheat and oats, equal parts

"Noon, wet mash, composed of: two parts bran, one part middlings, one part corn meal, one part gluten meal, five parts beef scrap.

"This is moistened just enough with cold water to make it crumbly, and is fed only in a quantity that the hens will eat up clean in about ten minutes.

"Three P. M.: Seven quarts of cracked corn, wheat and oats in equal parts."

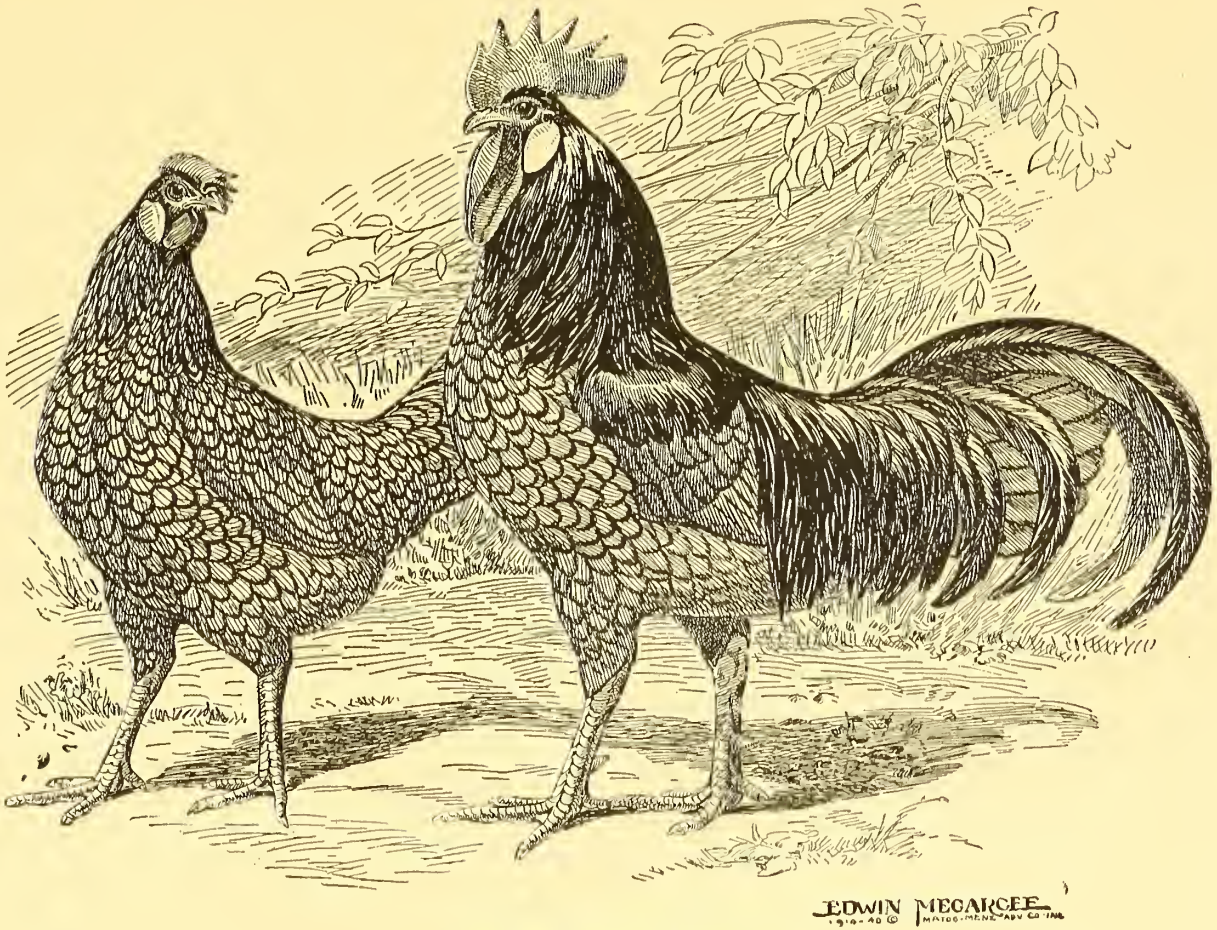
Grain is fed in litter, and green stuff, shell, etc., fed as in the old method. The ration has seemed to prove favorable after a year of experience. It appears to be more appetizing, the fowls seem to keep in better condition, while there is no noticeable difference in the expense.

There is a question as to whether stock that is to be bred from in the spring should be permitted to lay during the winter. Some advocate changing their quarters at intervals, shortening up on the egg food, permitting them to run in the snow, and thus by exposure that is not too severe, holding them back in the egg yield until the hatching time in March or April.

The best authorities, however, seem to hold now that a moderate egg production thruout the winter has no injurious effect upon the offspring. If the fowls are kept in first class physical condition, well fed and well exercised, a reasonable egg yield during the winter will rather improve the breeding qualities. But no forcing method should be followed thru the winter if the hardiest chicks are desired for the next season.

Duncan Forbes Laurie, lecturer on poultry culture to the South Australian Government, in discussing the feeding of breeding stock, warns against over-fattening. He says it is practically impossible to get an over-fat hen into good breeding condition again. He also warns against the use of spices and drugs and condiments of all kinds, and advises a careful watch as to the condition of the breeding birds. This will consist in an actual physical examination of the fowl as to the amount of fat she is accumulating, the brightness of the feathers, the presence of vermin and parasites of all kinds.

A lousy fowl need not be expected to do well as a breeder. Her vitality is certain to be sapped and her nervous system seriously affected. Give her therefore plenty of room all thru the winter months, keep her happy and busy, see that she is not being carelessly fed nor over-fed, keep her clear of vermin, let her lay a fair number of eggs, and she is bound to bring you offspring that will enrich your flock.



BLUE ANDALUSIANS

Blue Andalusians

To many people the Blue Andalusian is the most attractive of all domestic breeds of poultry. It is of medium size, graceful and active and its plumage is clear slaty blue, marked with a darker shade of blue, as shown in the drawing. The hens are virtually non-sitters and are remarkable layers of large, white-shelled eggs. The desired weights are as follows: cocks, 6 pounds; cockerels, 5 pounds; hens, 5 pounds; pullets, 4 pounds.

A SPANISH FOWL WEARING AMERICA'S COLORS

Intermediate in size between its close relatives the Leghorns and Minorcas, the Blue Andalusian is a graceful and symmetrical fowl, having great beauty of form and color. Though in all probability a native of Spain, it carries the American colors—red in comb and wattles, white in ear lobes, blue in plumage. That this is a unique and most striking combination goes without saying.

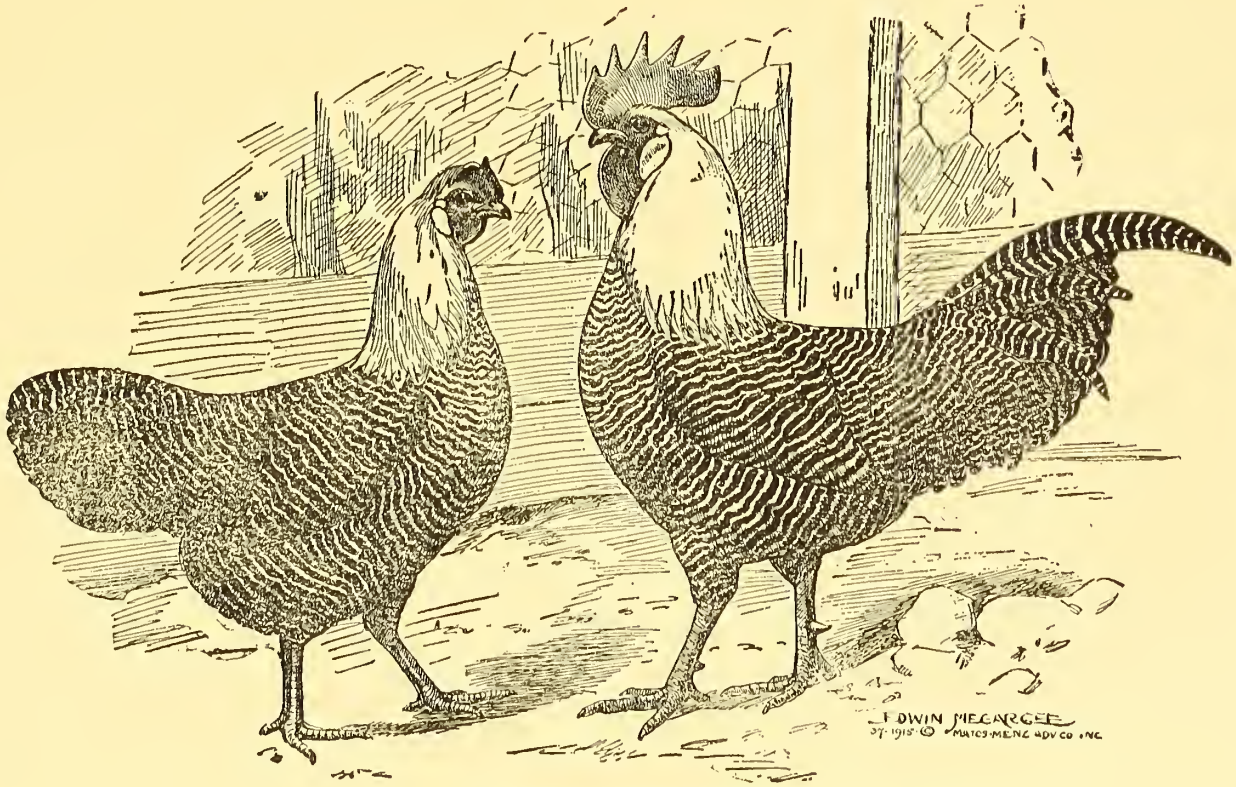
Aside from its attractive appearance, the Andalusian has very substantial grounds upon which to base its claim for popularity. It is an excellent layer of large, chalk-white eggs, the kind which are most in favor in some of our leading markets.

The typical Blue Andalusian leans somewhat taword the Minorca type. The illustration shows this, as well as the color distribution. Hackle, wing-bows, saddle, sickles and tail coverts of the male are lustrous bluish-black. The rest of the plumage, as well as that of the female, is a clear, medium shade of slaty-blue, each feather being laced with a darker shade. In both sexes the beak is horn color; the eye, bay; ear lobes, white; shanks and toes leaden blue.

It must be admitted that even the best flocks of this breed do not breed true to color. A certain proportion of the chicks come either black or white. The purchaser of hatching eggs must expect this, and not blame the fancier from whom the purchase was made. But when a few good specimens are secured, one must admit that they are worth all the trouble required to produce them. Of course, the off-colored birds are just as good for utility purposes as the beautiful blues, and may profitably be given a place in the laying flock.

The exact origin of this unique breed is the subject of much speculation. As before stated, the available evidence indicates that its original home was in Spain. Whether it was a distinct breed or originated from crosses of the black and white fowls from which other well-known breeds have descended is a question which probably will never be definitely settled. In any event, the Andalusian was not perfected in its native home. The painstaking fanciers of England must be given credit for this work. It was first introduced into that country in 1851, a few specimens having been purchased from a ship touching at Portsmouth. It is said that these were lacking in uniformity of type and were poorly marked, but carried the beautiful blue color in practically all sections. Upon this foundation the modern type was built.

From England the bird naturally came to America. It has many enthusiastic admirers, and seems to "make good" whenever given an opportunity.



SILVER CAMPINES

Silver Campines

The Silver Campine, illustrated herewith, is a small, clean-cut fowl, active and nervous in temperment, resembling the Leghorn in this respect. The plumage pattern is much alike in both sexes, the hackle being silvery and the rest of the plumage clearly barred, with silver and black. Comb and wattles are rich red; ear lobes, white; shanks and toes, lead color. Standard weights: cock, 6 pounds; cockerel, 5 pounds; hen, 4 pounds; pullet, 3½ pounds.

The body conformation tends toward squareness or blockiness, and this is somewhat accentuated in the male, because of the absence of long, curving sickle feathers, which are so typical of the males of most other breeds having similar characteristics.

Campines are universally recognized as being most prolific layers. Their eggs are of satisfactory size and are peculiar because of the exquisite pearly whiteness of their shells.

When first introduced into this country, the Campines seemed to be lacking in hardiness, and this weakness worked harm to the breed. However, the trouble seems to have largely disappeared as the birds became acclimated and accustomed to their new environment.

For a time there was much confusion because the Campines and Braekels, another Belgian breed, bore such a close family resemblance. Separate classes for the two breeds were made at a leading poultry show in 1884, and since that time they have become clearly differentiated.

Chapter XV

Mid-Winter Points of Prime Importance

"My father's father's father set this tree
That yields this summer hour its boon for me.
Far back a scholar reared a sire of mine....
What fruits I gather—latest of the line!"—Edith M. Thomas

BEWARE the winter months. You may win or lose during the few weeks from December to March. There are eight or ten little points to be observed in the successful winter care of fowls. Neglect one and you may as well neglect them all.

The aim of this chapter is to get these few vital principles set in rapid and vivid array, "Lest we forget." A little slip may do more damage than we know. Let us keep our wits and our wills at work in order that we may be saved from breaking one of these least commandments.

(1) Schedule Care.

I put this first because first things should be put first. You neglect your fowls in mid-winter time for one single half day at your financial peril. The man with a dozen in his back-yard six-by-eight house knows the meaning of this better than the ten-thousand-egg poultry farmer.

Schedule care three times a day for three hundred and sixty-five days in the year is the price that must be paid for success that is worthy of the name in the twentieth century poultry yard. It is the man who "thinks" that they will be "all right" if he does not look after them the third time who falls short in profits. The man who neglects the second trip in his daily care of the layers will not only fall short but will be almost certain to fail utterly. Remember this first commandment..

(2) Elbow Room.

A hen is as much of a social being as a human being is. Poultry love to "flock together,"—like many other kinds of birds. But Nature created them for the great out-of-doors. Every point in their anatomy speaks of the large outlook and the wide range. They are native to the limitless wilds. They are only a few geological minutes removed from the boundless wilderness.

While intensely social by nature, therefore, their dumb souls cry out for ROOM! ROOM! We are getting them bred down pretty successfully to live in large flocks in comparatively small space. But the poultryman's judgment must be constantly on the alert lest the instincts of these feathered and winged creatures of the great open spaces of the world shall revolt and cut the egg product in half or defeat it completely.

More than "standing room" is required. At least four square feet of floor room to the bird must be insisted upon. Below this minimum average you run the risk of absolute failure at every point of your business. Look to it. It's never too late.

(3) Constant Employment.

"Satan finds some mischief still for idle hands to do."

This familiar poetical proverb is just as true with regard to the feet of the laying fowls in winter. They must be interested and active.

Watch them during the natural reproductive season. The whole bird creation is working to the limit of physical endurance fifteen hours of every twenty-four. An idle bird in mating time is a most unnatural thing. Continual and interested activity in pursuit of food is the natural, normal, and necessary condition to right reproductive work—and the laying of eggs ought to be just that kind of work whether it is in January or June.

Keep them employed therefore. I am convinced that thousands of poultrymen fail at this point. Bury the grain food in deep, clean straw litter. Take special care to mix the grain all thru the straw. You would never be able to find it all with your hands and your eyes; but the ancestors of the fowls in your pens dug their living from deep leaves and jungle dirt for a hundred thousand years or more. Health, vigor, vitality, everything depends on such continual and interested activity. Look to this if you desire eggs in abundance and strong young stock in the spring hatches.

(4) Balanced Rations.

This is "up to you." Fowls in confinement are at the mercy of the man who cares for them. Let them out in the open in midsummer and they will balance their rations themselves in fine scientific manner. But in mid-winter they are penned up within four impassable walls. They must therefore take what you give them.

If you feed a dairy cow on nothing but corn stover she will live, but will give very little milk. Wheat bran is an excellent thing; but to feed nothing except wheat bran will send every cow in the barn to the dry dock. In a hundred ways we could illustrate the great need of care in balancing the ration.

Common sense gets many a man thru right successfully; but the results of scientific experiment must be depended upon or we will all lose out. Study there-

fore the balanced ration recommended by the foremost experiment stations in the country. Search for the highest authorities. This is one of the "Points of Prime Importance."

(5) Blizzard-Proof Quarters.

Our northern climate is treacherous. Give it half a chance and it will defeat your purest and most lofty aims in poultry culture. This is a familiar point. Not one of us ought to be in need of light here. But the fact remains that thousands of poultrymen are victims of their own neglect in not putting up the right kind of fight against the ruthlessness of old Jack Frost. They take too much for granted.

A bright day with a slight suggestion of spring in the tang of it prompts them to let the birds loose into a slushy snow and ice cold water. The result is a cut of from fifty to seventy-five per cent in egg production—sometimes a complete stoppage. This is not right. Again, a small neglect in keeping the doors and windows of the henhouse closed will mean an overnight surprise. By daylight the damage is done. It will take a month to get back to the regulation pace.

This point means not only persistent and thoughtful daily care to protect the birds against slush and frost; but it means proper protection in their sleeping quarters. The curtain should be dropped over the roosting platform every cold and windy night that heat may be conserved and drafts defeated. It's amazing how much the daily and nightly comfort of the fowls means. Here, too, defeat or victory may turn.

(6) Liberal Allowance.

The man who does not feed plentifully will not gather eggs plentifully. This is not at all the question of the balanced ration. It is the problem of the **sufficient** ration. With feed high in price there is a deadly snare laid at the feet of every poultryman. It is the constant temptation of shortening the allowance to the point of danger.

Experiments have proved that hens that are fed liberally will not only lay more eggs than hens that are fed scantily, but that their eggs will hatch better. In fact the hen that is under-fed will be quite likely to stop laying altogether—while if you will increase her allowance beyond the point required for mere bodily support, she will rise promptly to her highest power of production. Care must be exercised, however, that fowls of the breeds that tend easily toward over-fatness be fed on less fattening food, and that they be compelled to exercise regularly and hard. Don't underfeed your flock if you want the most out of them for eggs as well as for offspring.

(7) Scientific Management.

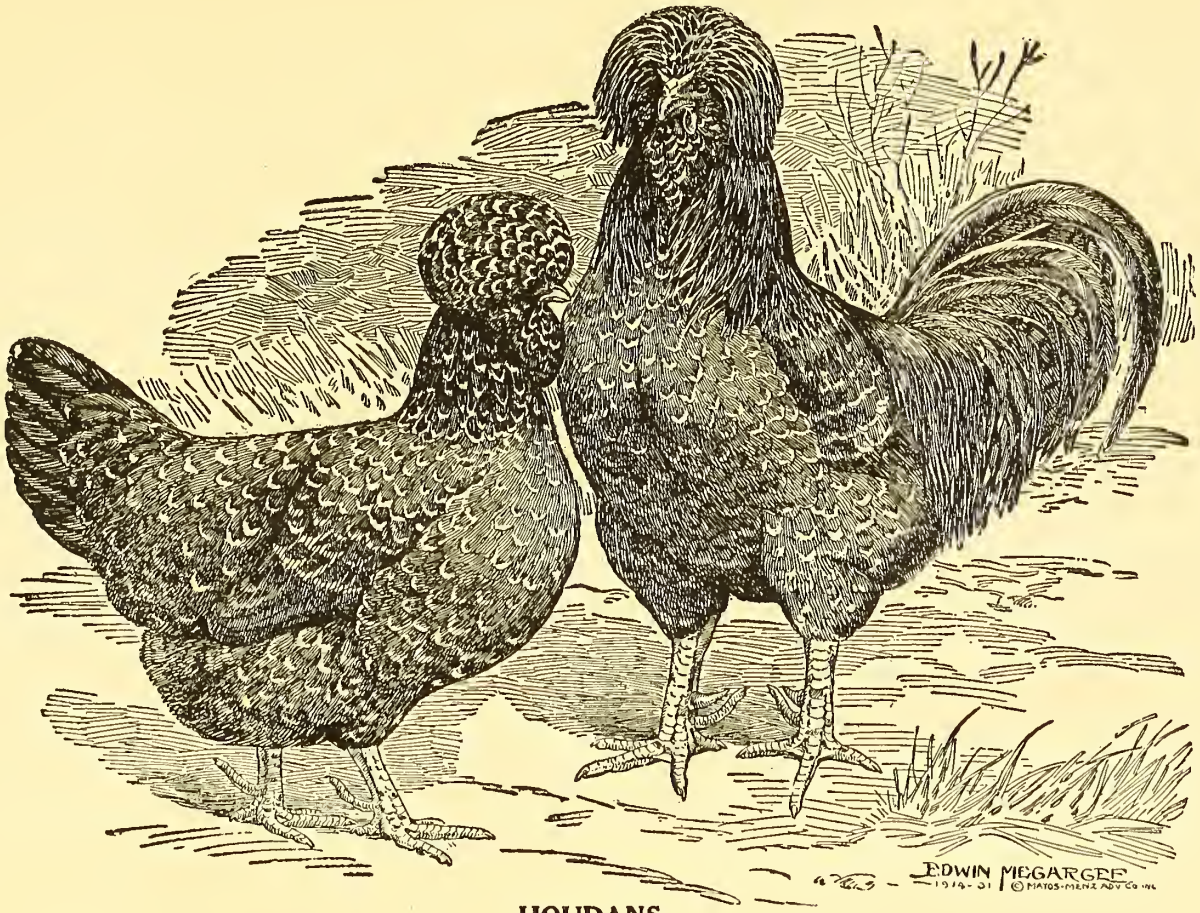
"Scientific Management" is in the air. We think it and talk it and breathe it and try to practice it. It means hard work down to the smallest items of our business lives. It means making the most of the by-products. It means the saving of time—which means the saving of labor.

There is a science in the doing of everything. The successful man is the man who can bring his system down to correspond closely to the eternally right method. The demands of these present times are overwhelmingly insistent on just this line. We must do things correctly. The poultryman who isn't ready to put his "gray matter" into his business with all his might is passing thru perilous days. No "hit-or-miss" methods will do. In this work just as in every other work we must practice CONSERVATION in every particular, and in the truest sense of that much used word. So we must never lose sight of the garden or those acres of hungry soil. It is up to every one of us so to conduct our business that we may be certain of success. This means exactness in every detail.

If the great trusts whose hands grapple all the nations of the world are so thoro in the smallest details, surely the humble poultryman cannot afford to miss the meaning of this modern worker of wonders: SCIENTIFIC MANAGEMENT.

(8) Intelligent Optimism.

Note that first word—"**Intelligent.**" I advise no man to rush forward blindly. Investigate. Think your personal problem out for yourself. Every man is peculiar. Every man's business prospects are peculiar. If you can't get the optimistic point of view, you may as well quit. But do not forget that the universal feeling among those who are best able to judge is that we have entered upon the most prosperous period that poultry culture ever passed thru. Surely eggs and poultry meat must come to their own among the essential food materials of the world. **Let's prove it!**



HOUDANS

Houdans

The Houdan originated in France prior to the middle of the last century. It probably carries the blood of the Crevecoeur and the Dorking, though this point cannot be definitely settled. The characteristic features of the breed are the large crest and beard, antler comb and fifth toe. The plumage is glossy black and white, distributed as shown in the illustration.

A FRENCH GENERAL-PURPOSE FOWL

One of the "Old Guard" of poultrydom, yet holding a high place in the estimation of poultrymen on both sides of the Atlantic, the Houdan deserves to be ranked among the breeds which are attractive to the fancier and useful to the commercial grower of poultry.

This breed was originated in France, where it has always held a leading position, both as a table fowl and dependable producer of large, white-shelled eggs.

There is some doubt as to the exact method by which the breed was produced. Some authorities claim that the original cross was made by using the old time Crevecoeur and the common five-toed fowl of the country; others that there was an infusion of Polish blood and that the fifth toe results from the use of the Dorkings. The commonly accepted theory is that the Crevecoeur-Dorking cross most satisfactorily accounts for the physical characteristics of the modern Houdan.

As a table fowl the Houdan is especially valuable. When properly finished and dressed it makes a beautiful carcass. The skin is white and fine in texture; the body long, with a large amount of breast meat; the thighs thick and meaty; the whole conformation plump and partridge-like. Further, the fat seems to be well distributed throughout the tissues, and not merely deposited in layers beneath the skin.

In color the plumage is a glossy black, relieved by clearly defined spots of white. The standard demands that each fifth feather show a white tip, though the preference seems to be given to darker birds in the show room.

The hackle and saddle feathers of the male are white tipped, and many of the sickle feathers and coverts are laced with white. White tips also show on the black tall feathers of the female.

The standard weights are as follows: Cock, 7½ pounds; Cockerel, 6½; Hen, 6½, and pullet, 5½.

Chapter XVI

Fertility and Hatchability of Eggs

"Now these are the laws of the jungle and many and mighty are they;
But the head and the hoof of the law and the haunch and the hump is—OBEY."—Kipling.

WILL YOUR eggs hatch? That is the vital question. It takes a big man to keep his head and heart when seventy-five per cent of his eggs test "no germs." It ought to be at least ninety per cent of fertile eggs instead of twenty-five. Here is where many a poultryman finds his finish.

The purpose of this chapter is to gather together a few proven points on a subject that will involve the success or failure of the poultry output. It requires haste. An after-thought four weeks too late will not do. Breeding conditions that are all wrong in January cannot be made all right in February.

Abundance of Fresh Air in the Breeding Pens

A suffocating flock of fowls will fail to reproduce themselves with credit. Well ventilated houses are the first consideration. This does not mean a blizzard-swept flock. It does not mean a zero temperature inside the pen. These things must be avoided—and still there must be ventilation. It is as possible in your henhouse as in your own home. Your fresh air scheme simply means plenty of oxygen such as you and your wife need to keep happy and in good condition. There must be abundance of foot room for the day and roosting room for the night, together with pure air all the time. This is possible. It is up to every man to solve this problem for himself.

Vigorous, Perfectly Formed, and Thoroly Matured Breeding Stock

I have treated somewhat of this in another chapter. The importance of the subject warrants a risk of repetition.

Make a difference. Select most wisely. Discriminate mercilessly. If you would get fertile and hatchable eggs you can't afford to breed from cripples and weaklings. No bird that ever showed a single symptom of sickness should be permitted entrance into the breeding pen. There is no need of it. There are plenty of fowls.

The male should be as fierce and full of sexual force as an imported stallion. Females, perfect pictures of health, should be busy from the peep of dawn to the driving darkness. The male fertilizes the egg; the female makes it "hatchable." Her success will be determined by her physical condition.

The U. S. Department of Agriculture (Bulletin 236), says: "Hens suffering with disease or infested with vermin may lay, but eggs from such hens will rarely hatch, and even if they do hatch the chicks will not be likely to mature into vigorous or growthy fowls." Under this head comes also the necessity of exercise, a large variety of food, including green stuff, bone material and grit, with a due proportion also of beef scraps.

No Forcing for High Egg Production

Breeding birds should not be pushed for high egg records before or during the breeding season. No stimulants, no "lay or bust" preparations, no gorging with rich foods are to be permitted. These are all right for quick returns from commercial egg stock. But **vigor in reproduction** is what we are after.

An egg may be **fertile** and yet not **hatchable**: the germ is weak because of neglect of these principles. A medium degree of egg production is permissible and even desirable in breeding stock all thru the winter. This works no harm. In fact it is good. It is the forcing and the over-feeding that work weakness in the female. All authorities are agreed in this.

Keep Sexes Separate Until at Least Two Weeks Before Eggs are Saved for Hatching

Both males and females will be in better condition if this rule is followed. Experiments prove that hens will lay quite a large percentage more eggs if they are kept separate from the males. Everything possible should be done to conserve the strength and vigor of both. This matter of the segregation of the sexes until the arrival of the breeding moment is important.

Study Carefully the Ratio Between the Number of Males and Females

Where breeding birds are kept in a large flock several male birds may be permitted to run at large among the females. With Leghorns and smaller breeds one male to every fifteen females will do. With medium weight fowls, such as Plymouth Rocks, Rhode Island Reds and Wyandottes, there should be one male to not more than ten hens. With Asiatics it is best to have not more than eight females to one male. If the breeding pen numbers from twenty to twenty-five it is best to use two males, putting one with the hens one day and the other the next.

Beware, however, the large flock, unless there is an abundance of room. Confusion is little better than suffocation. Either will worry the hens to weakness and kill the vitality of the germ. Two or three hens only with one vigorous male will not do well. Jealousy and nervousness will be produced between the rival females, and disaster will result.

Note Inherited Hatchability Among Females

It is a well observed fact that certain females among all animals are barren. Others are notably productive. This is true also among the males. It is well to keep a keen eye on the choice birds along this line.

The Maine Station, after very exhaustive experiments, came to the definite conclusion that the "hatching quality of eggs (measured by per cent of fertile eggs hatched) is definitely inherited in the female line and probably also in the male line." This is surely a point worth studying with care.

Observe Personal Characteristics of Birds

The most productive hen I ever owned—by which I mean the heaviest layer—would not permit the male with which I mated her to come near her. Repeatedly I tried to hatch eggs from her that were fertilized by my favorite male bird; but not one egg would show a germ. The cock bird soon developed a bitter hatred toward her. Favoritism must be especially observed where chicks are greatly desired from one or more particular birds. Some cock birds are harsh and cruel. Their vigor takes a vicious turn. Discover such defects in time to save the season's product.

Mate Cockerels With Hens or Cock Birds With Pullets

Young birds mated together are likely to weaken the stock. Of course no pullet should be mated for hatching eggs until she is fully matured. Eggs laid during the first month of a pullet's production should not be incubated. The first eggs are small and will not run as high in percentage of fertility as later. The bird has not yet got her full strength.

No bird ordinarily over three years old should be bred. In case of unusual vigor and very special points of excellence an exception should be made. Some fowls are in far better breeding condition at four years of age than others at two or even one. The individual should be studied always.

Begin Early to Test Your Eggs

The forehanded farmer tests his seed corn and seed wheat weeks before he risks the planting of them. By this method he may save hundreds of dollars. Poultrymen should be as wise. Steam up the incubator. Make use of a broody hen. It will take only a few days to try some eggs out. If you do not care to hatch them they will still be of value. Discover as definitely as you can in January and February what you can reasonably look for in March. Treat your breeding pens accordingly. Eggs are of no small value. They should not be wasted by hundreds at hatching time simply because of lack of timely care.

Note Many Apparently Minor Points

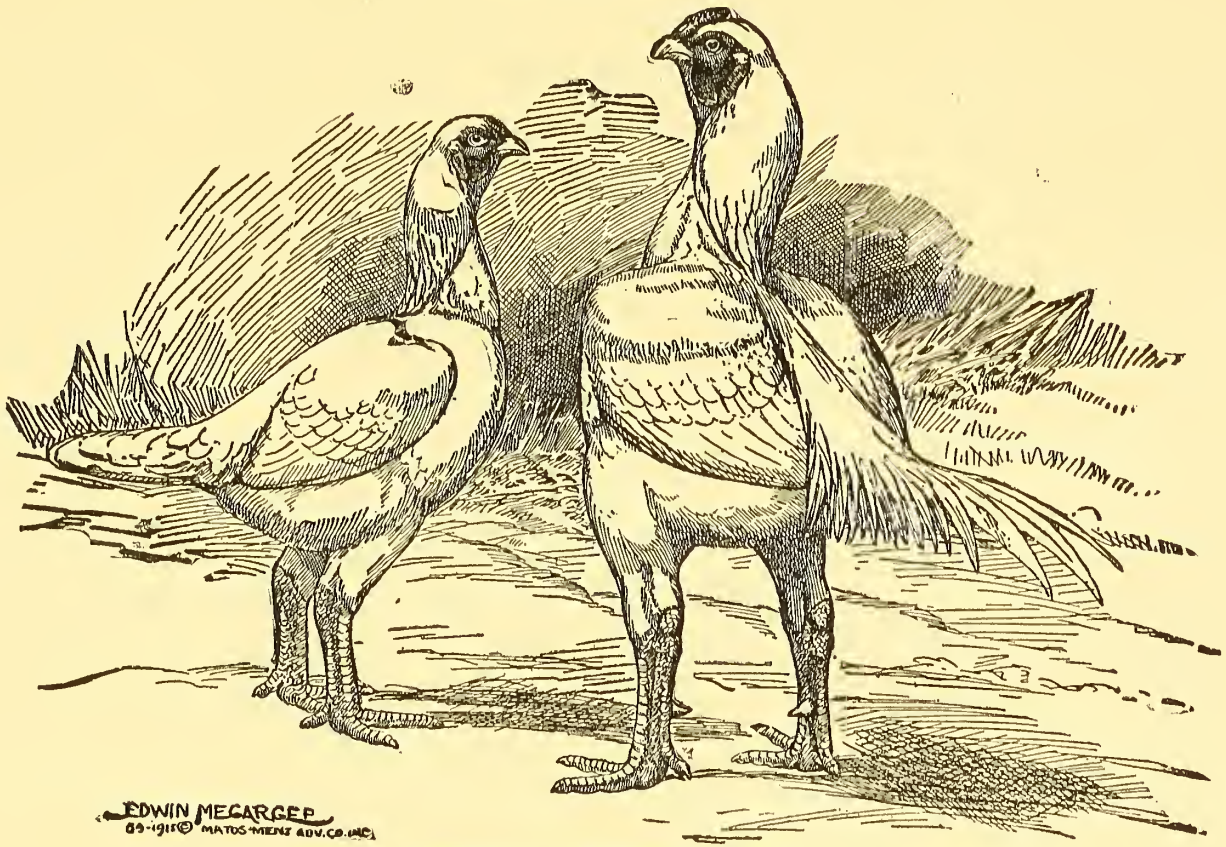
Too much frost will discourage reproduction. Frozen combs and wattles are fatal to all this business. The thermometer explains all about why the "birds of the field" do not build nests and lay eggs in winter.

Below a certain degree of cold the fertility will stop; a little lower the "hatchability" will stop; and then a little lower, the eggs themselves will altogether stop.

Keep the breeding stock happy. A slight matter? Well, if you forget it, you are a candidate for failure in poultry husbandry. Modern dairymen do not need to be reminded of the importance of this principle in the making of the largest possible amount of milk. The old time screaming, kicking, swearing, clubbing "hired man" is sent adrift "at the drop of the hat" on the modern dairy farm. He does more damage than good. Make the hens sing if you want eggs and fertile ones. Make them love you and run toward you when you enter the pens.

Read every book and every paper you can find on this subject. It is the man who closes his intellect against everything that has been discovered and printed who is doomed to throw the largest number of "addled eggs" onto the compost heap during the hatching season.

One more tning. After the eggs are laid see that no harm comes to them before they go inside the incubator. Dr. Bell of the U. S. Department of Agriculture says, "The eggs intended to be incubated should be kept in a rather cool temperature, 50 degrees to 60 degrees F. It is not advisable to keep them longer than two weeks before being incubated, and the fresher they are when set the better the chances of a good hatch and strong chicks. Only well formed eggs with good strong shells should be set."



WHITE CORNISH FOWLS

White Cornish Fowls

Cornish fowls are fair layers of brown-shelled eggs, but are especially valued as table stock. Many producers of high-grade market poultry cross Cornish males with hens of other breeds, thus securing young birds which are broad of breast and heavy in thigh. Cornish fowls were produced in England about seventy-five years ago by crossing several kinds of game fowls. The White Cornish is pure white in all sections, with red face and ear lobes and yellow beak and shanks. Though apparently not a large fowl, the Cornish is very heavy ,owing to its broad, compact build. Cocks weigh 10 pounds; cockerels, 8; hens, 7½; pullets, 6.

A NATIVE OF CORNWALL

The old Cornish Indian Game is now known merely as the Cornish fowl, the change probably being due to the fact that the old name might lead the uninformed to imagine that it is a pit or fighting game. Nothing could be further from the truth. It must be admitted that the Cornish male is more or less pugnacious, but in competition with the true fighting cock it would stand no chance. The speed, skill and science of the latter would be too much for the Cornishman, rugged, strong and brave though he is.

This race of fowl was produced long ago in the county of Cornwall, England, appearing about 1840. Authorities differ as to the original blood lines used. In the official breed publication of the American Poultry Association it is stated that the breed was produced "by crossing a Lord Derby Black-Breasted Red Game with a Red Aseel imported from England. Later on the blood of the Sumatra Game was introduced."

The original variety is the one now called the Dark Cornish, the plumage of which is green, black and red in color. Two other varieties have since been produced, the first of which, the white, is the subject of this article and drawing. The White Cornish is identical with the older variety excepting in the matter of plumage color, which is pure white in all sections, web, fluff and quills included. Beak, shanks and toes are yellow; eyes yellow, approaching pearl; face and earlobes, red.

A well-fleshed Cornish is a most deceiving fowl. While they do not appear large, owing to their compact formation and tight feathering, they feel like a lump of lead when picked up.

Typical Cornish are very sturdy in appearance, with stout, heavily muscled thighs set far apart. The breast is deep, broad and well rounded, the back broad across the shoulders, the neck short and thick. Another characteristic is the broad head, with projecting brows.

The carriage is quite upright, the shoulders being carried high, and the stern low.

Chapter XVII

The Sitting Hen and Her Brood

Agent for Incubator: "Think of the time it will save!"
Farmer (expectorating): "O, what's time to a settin' hen?"

THE SITTING HEN is with us and of us as long as we keep fowls at all. She is the 50-cent incubator which any home however humble may have. The world is not yet ready to dispose of her. She is efficient, too. Recent experiments at the Oregon station show that the hen can hatch a larger percentage of eggs and produce more vigorous chickens than the machine. This proves only that she has redeeming features, and that for some it is still worth while to make use of the broody hen.

The figures given are as follows:—From 879 eggs set, 60.6 per cent hatched in the machine, or a total of 533 chicks. From 279 eggs set under hens 78.8 per cent hatched, or a total of 219 chicks. Again, eggs incubated artificially tested 22.7 per cent infertile—under hens the eggs tested out only 11.8 per cent infertile. Hen-hatched chicks weighed more heavily. The mortality of hen-hatched chicks for the first four weeks was only one third of the incubator chicks.

Other figures might be given, all in favor of the hen.

But we must never forget that the sitting hen does business on a small scale. She is efficient as far as she goes; but she does not go far. Thousands on the farms and in the back lots are using her, and it is well to make the most and best of this natural incubator and brooder combined.

(1) Have a care for the eggs—The eggs are your "seed." You'll get what you sow. They must be from right source—vigorous, beautiful, heavy-laying stock, just the kind you want to breed. Select eggs of normal size and ideal shape. No rough shells should be permitted—and no "shadowy" shells. They are not likely to hatch. Keep the eggs not more than two weeks from the day they were laid. The temperature of the store room should run from 50 to 60 degrees. Keep them in the dark.

(2) Test the hen out—Not every hen is fit. The bird that fights and strikes too vigorously should be marked low for this business. It's important. Quietness, motherliness, the spirit of firmness and yet of fairness and tenderness, should mark her high. She will have super-sensitive things to sit on and to live with for the next two months. A termigant will not do. She will break more eggs and kill more chicks than she is worth—and quite likely she will throw the job up before she has been working two weeks. She should weigh about six pounds. Such a hen can cover 15 eggs after April the first.

(3) Consider the nest—Much depends on this. She must have a monopoly of her business for three weeks—no "butting in" by other hens. Her comfort, too, must be carefully studied. A cage, or coop, three by six feet is best of all. Close her in with wheat and cracked corn at her disposal. Clean earth or ashes should be furnished in a box for her to roll in as she likes. The nest box should be at least 14 inches square. If less it will crowd the eggs and breakage will be the result. Clean, moist earth in the bottom of the nest is excellent. Over this put well broken straw to the depth of an inch. The nest should not be too deep in the center. An almost flat bottom is to be preferred so that the eggs will not pile up or crush together. Of course there should be a well defined edge fitting closely about the body of the sitter and holding the eggs in place.

(4) Get her well located—Some hens are easily manipulated. When once broody they will sit anywhere you place them. Some are more or less sensitive about changes. Be sure that the broody spirit is strong upon her before you put her on the permanent nest. If she holds to the laying nest two whole nights and the intervening day, her condition is favorable.

Transfer her to the sitting nest at night and with great care and gentleness. Wake her up as little as possible. Put china eggs under her for the first twenty-four hours, or until you are sure she means business. Keep her nest darkened for a day or two. She will enjoy it better and will get down to solid work more quickly.

When well established, give her the eggs upon which she is to sit and permit her to have the high pleasure of pushing them skillfully under her warm body with her own beak.

(5) As to vermin!—Have an eye to this matter from the very first. An old nest has infinite possibilities in the production of the bloody, deadly spider mite. This little beast smites the hopes of many an amateur poultryman.

My first real effort at setting a hen was beaten to a "frazzle" by this little night prowler. It was in an old hen house. I knew nothing of the little microscopic vermin. At the end of the first week the sitting hen looked pale and spoke in discouraging tones. I lifted her off the nest and discovered to my amazement that literally thousands of red spider mites were sucking her blood with the savageness of weasels or wolves! The eggs were black and the whole nest was alive with the countless little murderers.

A great light came into my mind.

Arm yourself with the best insect powder that

you can find in the supply stores. Forestall any mass movement of the hen lice of whatever kind, by thoroly dusting the sitter's body and the nest and its surroundings. If your sitter is located in an old house where the lice are well established you will have to fight to the "last ditch" to get her thru alive—and then her chicks will be infested. Fight the deadly vermin off to the uttermost. If you can't stop their fearful havoc, you may as well throw the eggs to the compost heap. **But you can!**

(6) **Set several hens at once**—If you set one, set at least another at the same time. It could not be possible that you will want fewer chicks than you will be able to get from two well hatched clutches of eggs. Both hens will come off the nest the same day and all the chicks can be placed with one. Repeat this doubling process as your business demands. That is, set hens "two and two." If you can set twenty on the same day, very well. You will have ten broods, and quite likely less, for some will fail. There is a great advantage in having all chickens of the same age. They can be handled much more easily. This will mean more "head work" in the organization of your task—which will be good for you.

(7) **Care of the brood**—Natural brooding is easier than artificial brooding. April should furnish much warm weather, which will rejoice the heart of the hen in her motherhood. Get the chicks to the ground as quickly as possible—but not to the wet ground.

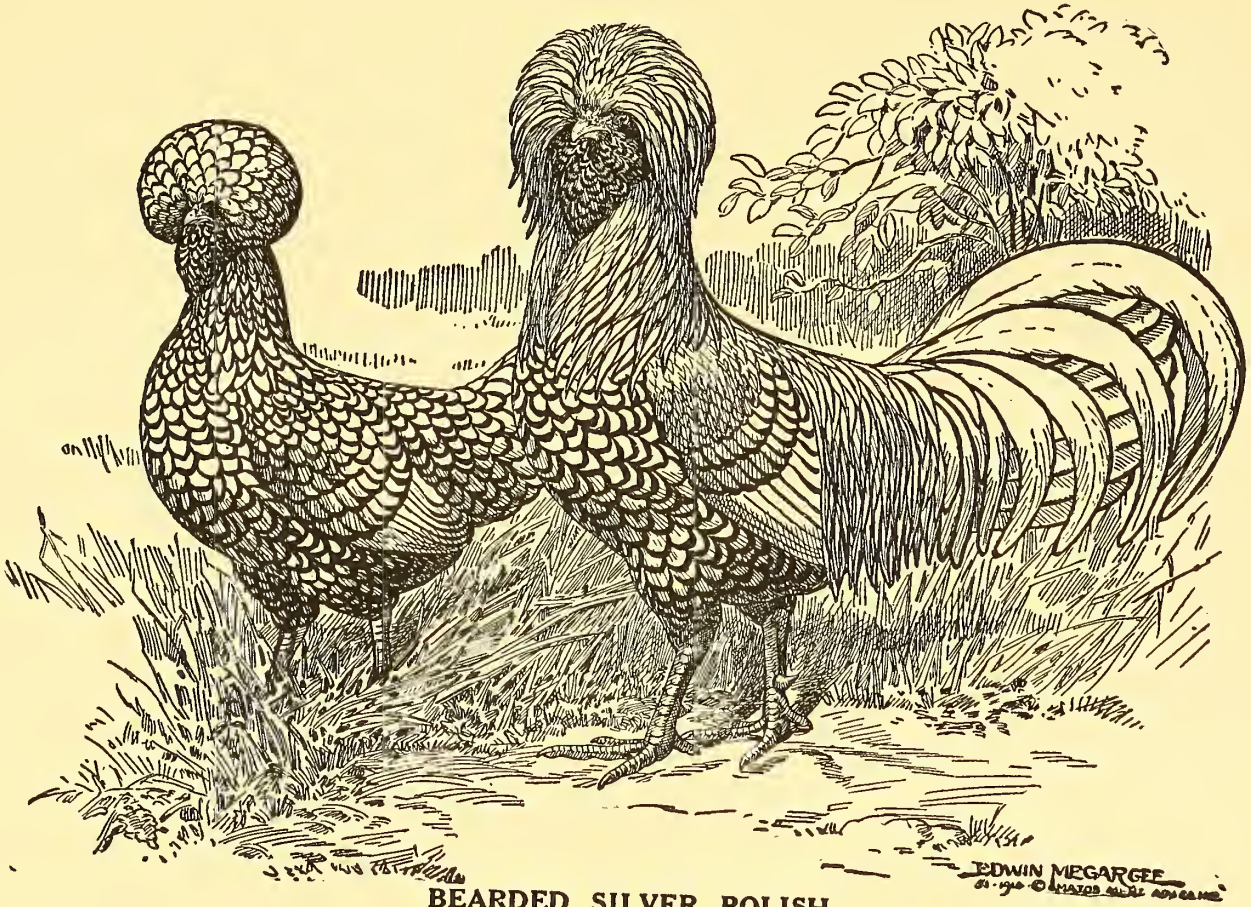
The first few days they should be cared for very tenderly. **Action** should be the word from the third day. They must exercise if they are to grow and be strong.

See that they dig for their dinners every day. It will be their joy, and it will be their salvation. If they are in a closed pen, furnish them litter an inch or two inches long from which they must scratch their pinhead oatmeal, fine cracked corn, wheat, or whatever hard feed they are given.

Let me throw out a general caution—A well hatched brood of twenty chicks with a careful mother hen is a beautiful sight, and should be reckoned worth twenty dollars at least in the month of April. Be careful how you let them loose over a hundred-acre farm to roam thru wet and dry, and thru every sort of danger. They will be almost certain to return at night with an average of one or two less in number.

The mother hen may do everything that a mother could be expected to do for their protection. It will be of no avail. Life after life will have to be surrendered as tribute to the wild. This should not be so.

Therefore **corral** them so efficiently that every little life shall be guarded every moment of day and night. Little use to hatch chicks at such cost of thought and care if you are to let them loose for weather, and weasels, and hawks, and accidents, burning sun and chilling wind, and a score of other life-taking agencies to prey upon. **Know where they are and know that they are safe.** This is just as important with chicks as with calves or pigs or sheep. If this **general caution** is heeded the percentage of loss should be exceedingly small. After the first month they may be given more freedom. Later yet, still more. But when very young they must be safe-guarded from a hundred dangers or you are bound to be disappointed.



BEARDED SILVER POLISH

Bearded Silver Polish

The Polish breed as a whole is unusually beautiful and striking in appearance, though not highly valued for utility purposes. Bearded Silver Polish are particularly ornamental. Their color is white, cleanly and regularly marked with black, as shown above. Crests and beards should be large in size and evenly developed, these points being highly valued by fanciers. The hens lay very well, their eggs being small to medium in size and white-shelled.

WONDROUSLY BEAUTIFUL ORNAMENTAL FOWLS

In the whole list of breeds of poultry, and it is a long one, there is none that excels the Bearded Silver Polish in beauty of plumage and striking and unique points. Graceful in form and carriage; with huge crests and odd beards; with beautifully marked coats in contrasting colors, this variety may well lay claim to being the dandies of poultrydom. Frankly a fancy or exhibition fowl, difficult to breed to any considerable degree of perfection, the Silver Polish is essentially a favorite of the dyed-in-the-wool fancier. It is true that the hens are very good layers, but they are seldom, if ever, kept for the commercial production of eggs.

The ideal shape of the breed is so clearly shown in the cut that a further description is not required. The surface color of the plumage of the variety under discussion is white, each feather being faced with black. The undercolor is usually slate. The bill is horn color, shanks and feet lead blue.

Crests should be large and symmetrical and beards thick and large, extending in a graceful curve well to the rear of the eyes.

For small flocks on home grounds or estates, where beauty is the leading consideration, this lovely variety of a wonderful breed is worthy of special consideration.

Chapter XVIII

Brooding Chicks in Close Confinement

"If it is possible it is already done. If it is not possible—we will do it."—French Motto.

THE BACK YARD bird must be content with limited range. The man in the town ought not to permit his chickens to run at large. This goes without saying. Therefore, close confinement must be the rule. Is it possible to raise good fowls in close quarters from the shell?

The cry of many is, "They will not thrive if you pen them up!" Is this the truth, the whole truth, and nothing but the truth? It surely is not. Judging by the percentage of loss in most farm flocks, and by the skinny specimens that are carted to market in the fall, it will be just as much in order to ask the question, "Does it pay to give birds unrestricted liberty to roam over a vast plantation?"

True, they get exercise, fresh air, and a large part of their daily rations from the wilds. But they will also be thrown into the teeth of perils that will permit only a few of the strongest to survive. Free range is good if handled with caution and high class wisdom. But anything carried to extremes becomes a deadly peril. This is exactly the case with the free range fad.

Millions of birds, the most beautiful and thrifty to be found on the continent, are raised from the shell in small quarters on miniature back lots. Don't you get fooled, my friend of the town lot. There's a big place for you in this great modern poultry drive. You are surer of success with your little flock than the average farmer with his average methods.

Advantages in Close Confinement

(1) **You know where they are.** This is of large value to the poultryman. If you know where your fowls are every moment of day and night it means a good deal for your own pleasure, and it means a very great advantage in giving them the best care possible.

One reason why there are so many little grave stones in our cemeteries is the fact that so many parents do not know where their tiny tots are wandering much of the time from morning till night. The principle holds in everything. The most efficient poultryman knows well just where his birds are. They are kept at his finger tips. An immense advantage of raising chicks on the intensive plan is this very thing.

(2) **Free from perils of the open range method.** Here is where the back lot breeder has his farmer friend seriously handicapped. The dangers of tragic death so common to the farm range flock are reduced almost to the zero point in the rightly conducted little back yard plant. The tender youngsters can be protected in an endless number of ways from the terrible attacks of skunks, weasels, dogs, cats, rats, hawks and every other deadly enemy of the free range flock. This is the reason why the man in town can raise so much larger proportion of chicks hatched than the one on the big farm. This principle will be made much larger use of in the "good time coming" when we have discovered more about poultry culture.

A living and well developed fowl will be more appreciated—and the jungles of danger on the average large farm will not swallow up such a large number of young chicks.

(3) **You can rear them to suit yourself.** The free range flock rears itself to a very large extent. About all the care taker does is to throw out some grain once a day. I admit that excellent birds are raised in this way; but the principle of the "survival of the fittest" is permitted to have practically full swing until the fall round up. There is surely much advantage in having the birds directly under one's eye from the first. If this advantage is made the most of by the man who has only limited space, he can raise a large percentage of the finest fowls in the world.

Dangers in the Intensive Method

There are dangers, very serious dangers, in the close confinement system of brooding young fowls. You who have half grown birds, or little fluffy things just tumbled out of the shell, better take careful note of the perils that are incident to handling birds, young or old, in small space.

The temptation to crowd is powerful, and many times irresistible to the beginner. I have seen the ground, or floor of the pen, literally covered almost to the limit of standing room, by squealing and bewildered chicks. They can never thrive under such conditions.

The poultryman who has only small space in which to raise his chicks must be content with raising fewer birds. The man with a space only twenty feet square must not undertake to raise so many chicks as the man with twenty broad acres. The crowding temptation must be resisted or failure will result.

One's common sense is his only dependence in judging whether he is keeping too many birds on a given surface. If they are restless and worried, fighting and trampling over one another, they must be relieved. They are crowded. They can not do their best. One season I raised to full maturity from the shell seventeen Rhode Island Reds in very small space. Their night quarters were three by six feet. Their little out-of-doors park was only seven by eight feet.

The seventeen birds were raised therefore on seventy-four square feet of surface. They were as fine fowls as I ever saw at maturity. I had capons that weighed eight pounds apiece at seven months of age.

The chicks were hatched the twenty-eighth day of May, and during January, February and March they laid eggs for me till my soul was filled with joy and my purse with good cash. It was very seldom, and then for very short periods of time, that they were permitted to step outside their little enclosure. They grew like weeds and throve like pigs in clover.

But don't you believe that I was not careful in handling that fine little proposition. I kept them busy as bees, so far as it was possible, every moment of their waking time. If I had not they would have invented every conceivable method of deviltry. They would have puffed out in body and weakened in their muscular systems, and would probably have "gone down on their legs" before they were two months old.

Light litter was placed in their sleeping quarters, and care was taken to keep it clean. In this litter they were compelled to dig for mixed scratch feed every day. It does not take much to keep them busy. An abundance of green food was kept before them in their open yard. I was not careful to limit them in this supply. Weeds from the garden, the larger the better, were placed in such a position as to require effort on the part of every chick to get his share. So their muscles were kept in fine trim, their digestion strong, their appetites powerful.

A mixture of ground feed was put before them and kept there as a dry mash from the very first. I was specially careful to keep clean, fresh water before them all the time. This water was served in a galvanized gallon fountain such as can be purchased at any supply store for half a dollar. The earthen fountains are as good or better. But I would not advise any man to try to save a few pennies by making use of all sorts of old cans and house dishes for watering the chicks. The old can will be black with rust in two or three weeks, and then you are likely to make your whole flock sick. If several do not die, you will be lucky.

You saved your pennies; but you lost your dollars. Did it pay?

A serviceable drinking fount that is coming into general use is the inverted Mason jar that fits into a metal pan. They are especially suitable for chicks and small flocks of poultry.

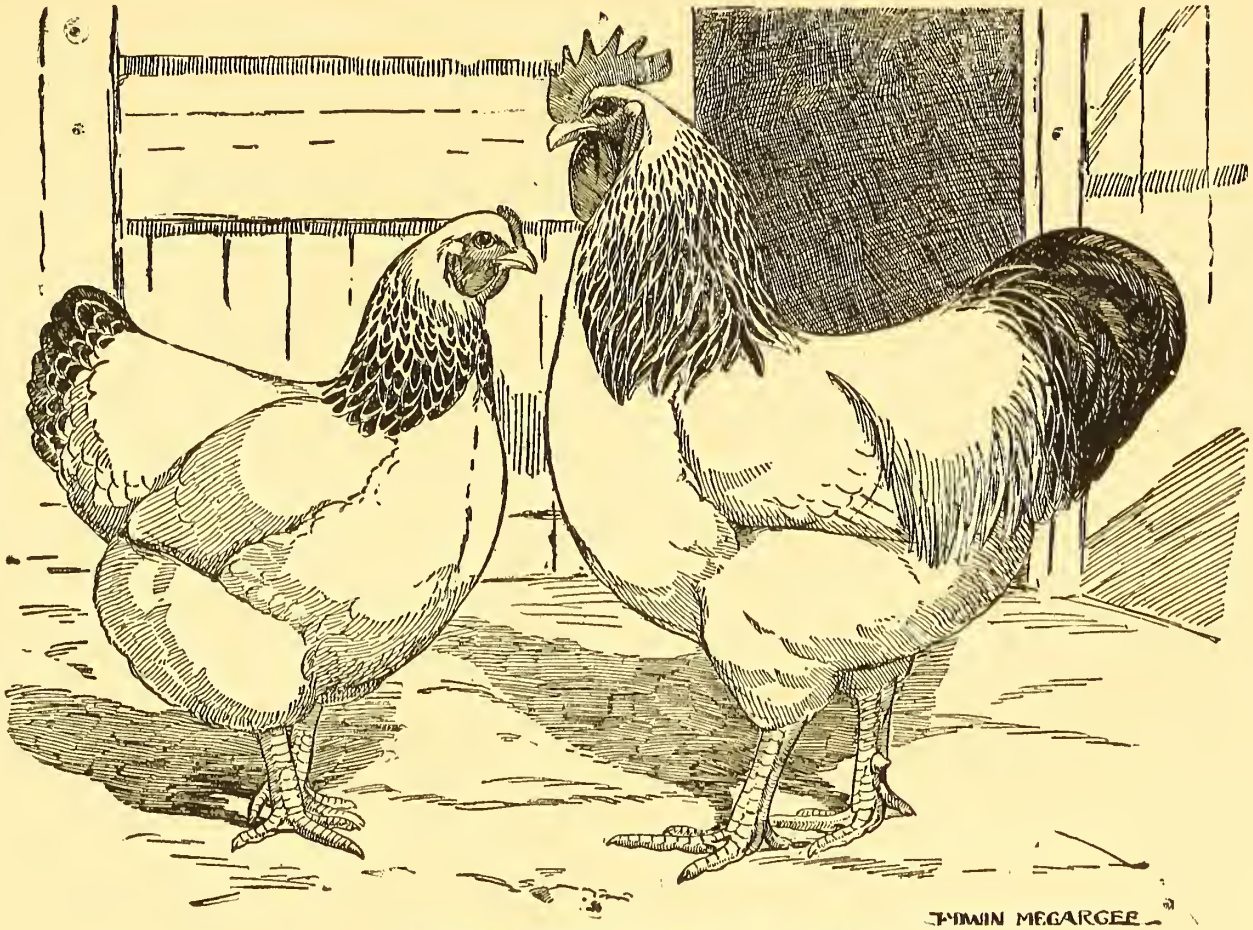
Fowls raised within such small bounds require more constant and watchful care than those kept in larger range. The fun of taking care of them more than pays for the extra time given. Every one needs such recreation. It makes him not only happier, but better. He gets more out of life and can put more into life.

Three times a day at least the wants of the little brood should be looked after. Five times a day if possible. There's great danger in neglect. A man who is in full fellowship with his little flock will be almost certain to see something that he can do for them every hour of the day. If his business requires him to be away from the home acre most of the day, somebody about the house should get closely into sympathy with the little back yard plant, and visit it thru the day at proper intervals.

In case of storm or savage winds the flock should be kept under shelter. They will get drenched and chilled to the bones many times during the summer if they are not looked after. They are like children a quarter grown. They will take dangerous risks.

On the farms many chicks are blasted in health and die outright because of exposure to severe weather. This danger can easily be avoided where the space is limited, and therefore the flock is easily managed.

There is no doubt that disease is more likely to visit the flock that is closely confined. But if they are fed a well balanced ration, encouraged to exercise freely, and everything is clean, disease will have no chance at them. The danger from lice must never be forgotten. Several times during the brooding season every chick should be carefully inspected. If even one louse is discovered every bird should be powdered thoroly. This is matter of prime importance.



COLUMBIAN PLYMOUTH ROCKS

Columbian Plymouth Rocks

This new addition to the splendid Plymouth Rock race combines beauty and utility value in an unusual degree. Though a typical Rock, it also carries the blood of the Light Brahma and the Columbian Wyandotte, both of which are valuable kinds. The plumage is beautiful, in color black and white marked as shown in the illustration. The hens are good layers, the chicks are hardy and make rapid growth, so the Columbian Plymouth Rock appeals to fanciers, market poultrymen and egg producers alike.

AN AMERICAN FOWL RECENTLY INTRODUCED

The Columbian Plymouth Rock is the latest addition to the already large American class, but though it was not admitted to the standard until 1910, it is already gaining wide popularity, and demonstrating that it is a worthy addition to the Plymouth Rock family.

The early Columbian Plymouth Rocks seem to have come from three different sources. What is believed to be the pioneer strain was brought out by crossing a chance-bred male of Plymouth Rock shape and Light Brahma coloring with both Barred and White Plymouth Rock females.

Another family resulted from mating Light Brahma males and White Plymouth Rock females. The third strain combines the blood of the Light Brahma-White Rock cross with that of Columbian Wyandottes. Probably single-comb sports of the latter were used in the work.

Later the three strains were doubtless combined, and the beautiful birds we now have resulted.

As the illustration shows, the Columbian variety has the typical Rock shape, long in body, moderately full in breast and low in tail. The thighs are large and strong, the shanks stout and straight.

Bold and alert in carriage, large and muscular, a well-bred specimen gives the impression of strength and activity.

In color of plumage the Columbian Rock is identical with that old-time favorite, the Light Brahma. This combination of black and white is pleasing to the eye, and the color scheme is a practical one also, as the birds dress off clean and white, free from unsightly dark pinfeathers.

The white hackle is marked with a rich greenish black stripe extending down the middle of each feather. Tail coverts are black, edged with white. The main tail feathers are black. Body plumage white. Eyes, face, comb, wattles and ear lobes are red. Shanks and beak, yellow.

As market poultry, Columbian Plymouth Rocks rank high. They grow quickly, are hardy, dress off splendidly and are ready for sale at either broiler or roaster ages. The hens average well as layers, some being remarkable producers. They are also dependable sitters and excellent mothers.

This is certainly a most desirable general purpose variety, and combines with unusual business qualities a simple beauty of plumage which makes it most attractive.

The required weights are as follows: cock, 9½ pounds; cockerel, 8 pounds; hen, 7½ pounds; pullet, 6 pounds.

Chapter XIX

The Poultryman Gardener

"The measure of a man's life is the well spending of it, and not the length."—Plutarch.

SHALL the poultryman engage in market gardening? Shall the market gardener engage in poultry culture? The answer to these two questions will determine the success or failure of thousands of poultrymen and market gardeners.

Poultry culture and Horticulture should always go together where it is at all possible. Let me give a few reasons which I believe may appeal to every one.

1. The Two Make a Natural Combination.

The culture of fowls goes naturally along with the culture of the land. Probably ninety-nine people out of every one hundred who cultivate the land keep more or less fowls. The man with a small garden on the town lot is quite certain to keep a small flock of hens. "A few hens and a garden," is the aim of every man in the suburbs. Very few would think of having the "few hens" without the "garden," or the garden without the few hens. The one suggests the other and the other suggests the one.

This is just as true as that the farm suggests the flocks and herds, and the flocks and herds suggest the farm. The smaller animal combines with the smaller farm as naturally as the larger animal combines with the larger farm. There is an everlasting fitness in the combination of poultry culture and horticulture. This appears to be practically self-evident.

The fatal weakness often is that the two are not combined in equal or sufficient measure. The market gardener is too likely to stop with a mere handful of fowls—and the poultryman is likely to cultivate with thriftless care an insignificant "patch" of ground. The combination of the two in equal strength is the desirable ideal.

2. The Saving of By-Products.

The garden needs everything from the poultry house, and the poultry house needs practically all the refuse from the garden.

Take the one valuable item of fertilizer. The benefit to a five-acre market garden of the poultry droppings from a plant accommodating a thousand fowls could hardly be estimated.

"Manure from any of the farm animals," says Prof. R. L. Watts, of State College, Pennsylvania, **"is satisfactory for garden work. Poultry manure is, of course, worth the most money, and if produced on the farm it should be carefully preserved for garden work."**

Without the garden the poultryman will be utterly unable to realize in his business the full value of this great by-product of his poultry plant . The man with a thousand fowls is quite likely to dispose of the droppings at practically a give-away price.

It has been carefully estimated that with $100 worth of eggs only about $2 worth of ferility is sold from the farm—while with $100 worth of wheat about $28 worth of fertility goes off the farm. In the sale of milk it is estimated that about four times as much fertility is taken from the farm as in the sale of the same value of eggs. In the sale of timothy hay it is claimed that some sixty times as much value in fertilizer is sold from the farm as in the sale of an equal value of eggs.

Since the problem of fertilizers is one of the most important ones thruout the year with the market gardener, this phase of our subject ought to command his very special interest.

Consider also the value to the poultryman of the by-products of the market garden. With skillful management, a large percentage of the food of his flock could be taken from the garden without reducing the profits from the garden. Wagon loads of green stuff that would otherwise be left to rot upon the fields can be fed to the fowls, thus saving many dollars in the purchase of feed, and many more dollars in the sprouting of oats, and in the securing in one way or another that absolutely essential part of a fowl's diet—"green food."

Every market gardener has more or less of surplus "stuff" on hand all the time, which must go to the compost heap if there are no fowls on the place to consume it. Bushels and bushels of "nubbins" from the corn patch could be thus utilized to the greatest profit. Otherwise they would be wasted. The litter for the poultry houses could be furnished from the cut corn stalks, or from the by-products of the oat patch. It is these small things that count so fatally against the right side of the ledger. It is the waste that cuts the profits down till they spell LOSS.

3. All-The-Year-Round Income.

There are seasons of small income from the poultry plant, and there are seasons of small income from the market garden. These two branches of work, poultry culture and horticulture, thus supplement each other. The summer is likely to be a dull season in the poultry house while the winter is likely to be a dull season in the market garden. With the two combined an all-the-year-round income is assured.

One of the most discouraging features about the

poultry business is the fact that from the first of July till the first of October there is quite likely to be more outgo than income. Many a man gets out of breath, out of heart and out of money before he sees the end of this long "tug of war." This is just the time, too, that the young stock requires the greatest attention and makes the heaviest pull on his purse for feed.

How amazingly the profits from the market garden could come to his relief and make him feel like a rich man instead of a chicken crank hanging on the "ragged end of nothing!"

A similar tug of war is the terror of the market gardener at certain seasons of the year. From January to March it is many a time a life and death struggle to keep faith, hope and charity living and thriving. If the last season was blighted by a drouth the market gardener's courage is at a still lower ebb. He is quite ready to quit the business and take his chances at something else. But if he has a poultry plant stocked with from 100 to 1000 layers in fine condition, you will be quite certain to find his spirits high and his faith strong. The dollars will be rolling in, and he will feel glad in the assurance that every month of the year will not only pay its own expenses but add something to the family saving account.

Such a combination, in fact, is what insures the common farmer a living and a profit. He does not put "all of his eggs in one basket"—he does not rest his whole fortune on one single cast; but he works in so many different crops and cultivates such a variety of animal life about the farm that a reasonable success is a matter of certainty.

The failure of one crop means the success of another. A dull month in the dairy barn may mean a very profitable month in several other departments of his combination farming.

The poultryman and market gardener should carefully consider this phase of their business.

4. Better Marketing Advantages.

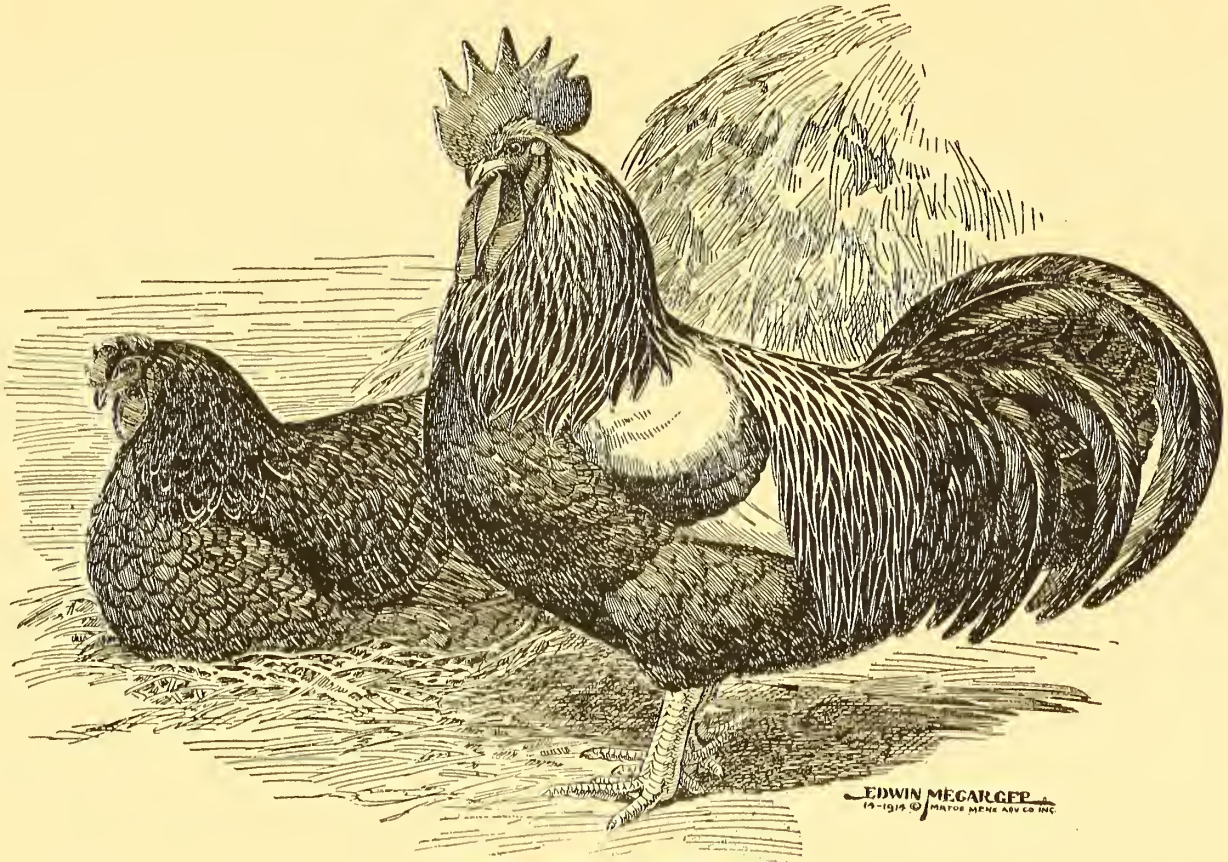
While the market gardener is making sale for his fine vegetables he can, with little loss of time, make sale for his fine eggs and plump broilers. So while the poultryman is making sale for his splendid wares, he can, with little loss of time, arrange for the sale of his market garden products.

An advertisement of standard bred poultry produced on a well known and well named farm will strengthen confidence in the quality of the poultry products—while at the same time it will speak well for the other produce of the farm.

Thus a profitable business will be assured thruout the year and from year to year. If it be objected that the one department of the combination will be likely to be neglected in the interest of the other department, it may be answered—**that depends on the man.**

There is no more reason why a large poultry plant may not be successfully conducted in connection with a large market gardening establishment than that a large dairy may not be conducted in connection with an extensive farming establishment. It all depends on the man.

Any man of fair ability and reasonable industry can combine the two, as thousands of men are now doing, with pleasure and profit. If more men would do this there would be fewer failures in the poultry business and fewer failures in the market garden business. It is this modern fad for specializing in one thing that sends so many to the wall of bankruptcy. There are so few that are masters of one thing that a combination of trades is desirable in most lines of life. The genius can succeed at one thing; but not many of us are geniuses.



COLORED DORKINGS

Colored Dorkings

This ancient English breed is held in high esteem because of its high table qualities. Its skin is thin, the flesh is fine in texture and evenly distributed and the proportion of bone and waste small. The Colored Dorking is the largest variety of the breed, weighing as follows: cocks, 9 pounds; cockerels, 8; hens, 7; pullets, 6. The breadth, length and depth of the body, together with the short, stout thighs and shanks, gives these birds a stately and massive appearance. The plumage colors include gray, staw color, black, white and brown. Dorking hens are fair layers of large, white-shelled eggs.

AN OLD FAVORITE

English poultrymen have long held the Dorking fowl in highest esteem, particularly on account of its unquestioned excellence for table purposes. When and where the breed first originated is not known, but some writers go so far as to suggest that it was known and prized by the Romans and was by them carried to Britain, where it has survived the centuries and still holds a very important place among the breeds of English fowls.

As already intimated, this ancient breed is most valued as a meat producer. It possesses the delicate skin, small bones, fine flesh well distributed over the body, and the white flesh and the legs which, in England, are regarded as the attributes of table fowls of highest quality.

As a layer, the Dorking is not in the lead. Most breeders usually refer to it as being a "fair" producer. In certain cases individual hens and small flocks have, under expert management, made very creditable egg records. However, the eggs are especially fine, being large in size and white-shelled.

In certain sections of America these fowls are considered somewhat delicate. But many breeders have demonstrated that it is entirely possible to grow them successfully and profitably under the unfavorable conditions existing in our northern states.

In its native land the Dorking is bred in five recognized varieties, while in America we list but three. The Colored Dorking, illustrated herewith, is the largest. Males weigh 8 and 9 pounds; females 6 and 7 pounds, according to age.

In both sexes the neck should be gracefully arched and have a full "bell" hackle. The body, deep and long, square and massive, having almost a rectangular appearance as viewed from the side.

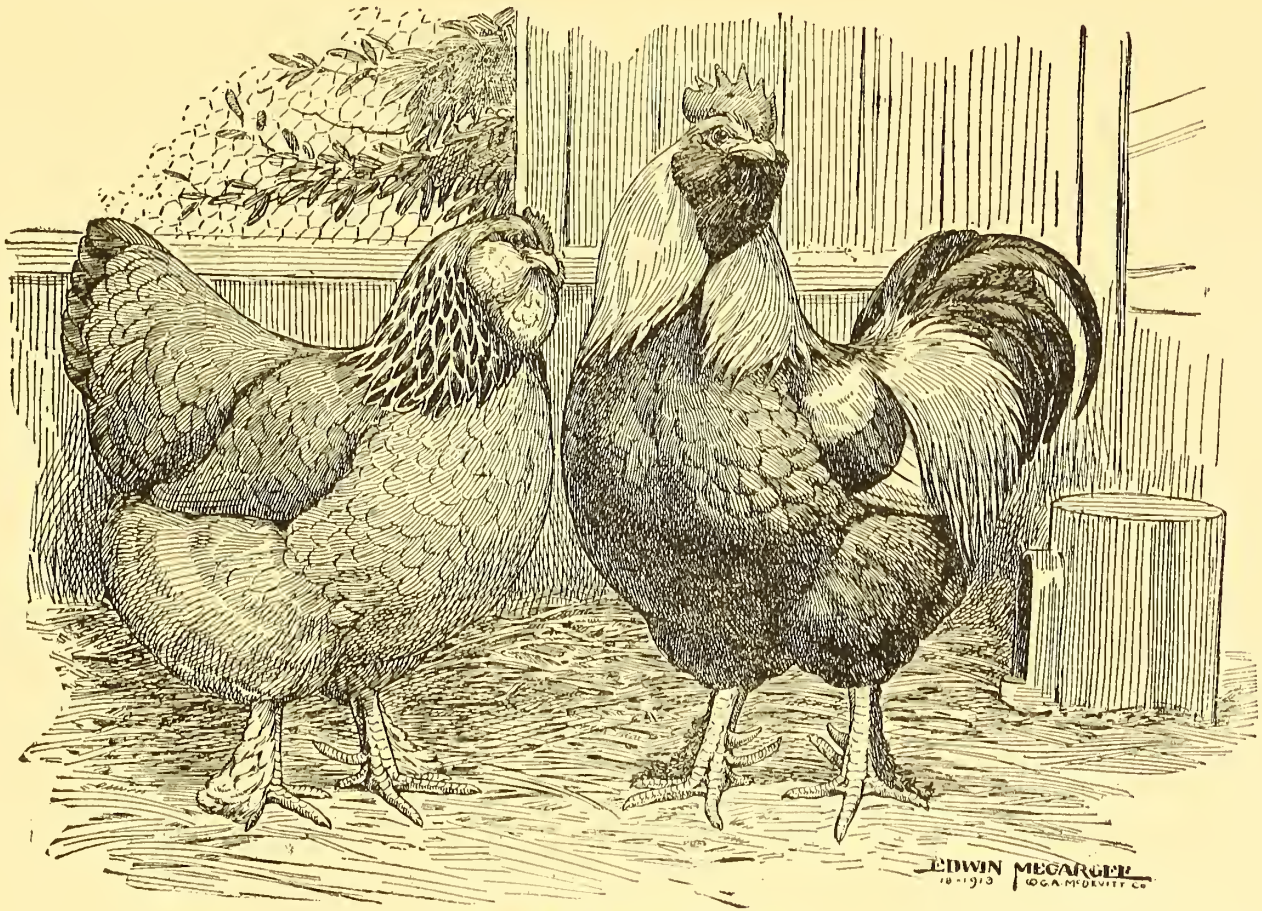
The breast should be deep and broad, carried well forward so the line between point of breast and thighs is very long. The back should be broad and straight, declining toward the base of the tail.

The tail should be large and full, carried rather low. Wings, large, closely folded; thighs, short and powerful; shanks, short, round in bone; toes, five in number, the fifth toe projecting from the legs and nicely turned up. The whole appearance of the bird should be stately and massive.

The desired color is as follows: in both sexes, comb, face, wattles and ear-lobes, bright red; beak, shanks and toes, white or pinkish white.

Hackle, back and saddle of male, light straw color striped with black. Wing bows, light straw; wing bars, greenish black; wing-bay, white or straw color. Body and upper parts black; tail, greenish black.

In the female, the hackle straw color striped with black; breast, dark salmon, each feather tipped with black; body, rich, dark brown; tail, nearly black or a rich copper color.



SALMON FAVEROLLES

Salmon Faverolles

The market poultrymen of France laid the foundation of this promising general-purpose breed a quarter of a century ago. The blood of the Brahma, Cochin and Dorking was infused with that of the Houdan, the popular local breed, and the Faverolle was evolved and its breed characteristic fixed. Though but little known in America, this breed is deserving of attention. It is hardy and productive, making fine table poultry and laying a goodly number of tinted eggs. The Salmon Faverolle, shown herewith, has plumage showing a pleasing combination of white, black and several distinct shades of brown. It retains the five toes and muff of the Houdan, the single comb and long body of the Dorking and the feathered shanks of the Brahma and Cochin. Standard weights: cock, 8 pounds; cockerel, 7 pounds; hen, 6½ pounds; pullets, 5½ pounds.

A FRENCH GENERAL PURPOSE FOWL

While the Faverolle has been bred in France for the last twenty-five years, it is of comparatively recent introduction in this country.

This fowl was first produced in the village of Faverolles, in the department of Eure-Et-Loire, in France, a district in which poultry keeping is the chief industry. The poultrymen of this section, in their efforts to produce a large, meaty, quick-growing bird, introduced crosses of Brahma, Cochin and Dorking on the native fowl, which are largely Houdans, and of these crosses the Faverolle is the result.

The Faverolle is a large, blocky fowl, having great depth of body and being broad and full in all sections. The legs are moderate in length and are rather fine in bone. It has five toes, deriving this charasteristic from both its Houdan and Dorking ancestors.

It has the muffs of the Houdan, the feathered legs of the Brahma and the single comb and long, deep body formation of the Dorking.

There are three recognized varieties of the Faverolle, viz.: the Light or Ermine (sometimes being bred pure white), the Black and Salmon.

The Salmon Faverolle, which is the subject of today's illustration, is a parti-colored fowl, and in its coloring, as well as in its formation, it plainly shows the varying influences which were brought to bear in its make-up.

In the cock, the breast, wing bar, body, tail and foot feathers are black; the muffs black ticked with white. The hackle, wing bows and saddle are straw-colored, while the back and shoulders are mixed straw and brown color.

In the hen the hackle is straw-colored, striped with dark brown; the muffs and breast are a creamy white. The back, saddle and tail coverts are a wheaten brown; the tail is a dark brown, while the thighs and fluff are ashy brown. The foot feathering is creamy white.

It is said by the French that as ideal farmyard fowl the Faverolles stand unrivaled, having large size, early maturity, great hardiness, superior qualities of flesh and good laying qualities. Also they are said to be good mothers and sitters.

As exhibition birds Faverolles of any variety are apt to be somewhat disappointing. Since they have been bred to color for a very short time, they do not breed true to a very great degree. However, their very real worth should more than compensate for any deficiencies in this respect. Furthermore, they give the fancier a splendid opportunity to show his skill by fixing the color characteristics of this truly splendid breed.

Chapter XX

The Poultryman's Side Lines

"Nothing except the mint makes money without advertising."

THE poultry keeper will do well to make much of his side lines. A man without a side line is a candidate for the madhouse. I mean the doing of other things other than the raising of chickens. There are many lines which one can follow with much profit without interfering with poultry culture proper. In fact these things may contribute largely to the success of the main business. I firmly believe that many a poultryman fails financially because he keeps himself exclusively to the one thing—Poultry!

On any poultry plant worthy of the name there are abundant opportunities for making hundreds of dollars aside from the breeding of fowls and the making of eggs for the market. The wise poultryman, the man who has the vision to "make good," will give very close attention to these chances on the side. Often a living can be drawn from them, and a large part of the "living" for the feathered flock upon which he depends for the bulk of his fortune.

(1) Kitchen Garden

There is much to be realized from the intensive culture of a half acre. If not a half acre, make it a quarter or an eighth. A score of things for table use three times a day for half the year may thus be produced in the pink of perfection.

A half-acre garden should be worth a hundred dollars a year to any man. This is better than $3,000 on deposit at bank interest. Only once in a while can you find a man who knows how to get the most out of a rich garden spot.

The first requirements should be a book of two or three hundred pages, fully illustrated and strictly down-to-date, compiled by the best authority on horticulture. This book should be carefully studied and religiously put into practice. The man who thinks he knows it all without studying the books has "FAILURE" written large on his frontal bone. The man who begins business with a determination to know from books and papers all that anybody knows or has discovered about all his different lines of work has "SUCCESS!" marked with equal emphasis all over him.

(2) Fruit Culture

Fruit culture is peculiarly adapted to go hand in hand as a side line with poultry culture. The yards and parks and fields in which the fowls run are made all the better for the well being of the birds if planted with fruit trees. The droppings of the fowls enrich the ground for the more favorable growth of the trees, while the shade of the trees brings health and happiness to the birds. A shady range is a hen's heaven.

Whenever a field is given up permanently to the culture of fowls, attention should immediately be given to the putting out of fruit trees in order that they may be brot to bearing as soon as possible. This will be eminently best for the poultry, besides bringing a double profit from the ground occupied.

An orchard is an excellent place for fowls to forage. Apples, pears, peaches, plums—any kind of fruit—except the bush fruits and the fruits that grow on the ground—can be profitably cultivated on the same yards and fields on which the fowls forage.

In this matter as well as in that of the kitchen garden the subject of fruit culture should be studied exhaustively from the very highest authorities. Books should be purchased and owned and kept within reaching distance of the poultryman's office desk. It's too late in the world's day to trust to "instinct," or even to early training, or to picked-up knowledge, or to a little acquired inkling of the way things should be done. Science is king today in every department of life and business—and SCIENCE is within the grasp of every man who will open his eyes and bestir himself to the best the world is offering.

(3) The Apiary

Half a dozen colonies of bees or more, with emphasis on the "More," can just as well as not be kept in connection with a large or small poultry business. It requires only a small space for the accommodation of a few thousands of these exceedingly intelligent and marvelously industrious little workers. With twenty "swarms" toiling all summer to help out on the family expenses, sweetness and light and joy will be certain to come in larger measure.

There's more in this kind of side line than many a man has dreamed of.

First of all, let him study exhaustively again the subject of bee culture, and when he is sure of his information, begin with a small program, learning from experience and from books and papers, and enlarging his honey-making side line on the same principle as he enlarges his egg-making main line.

Thousands would be keeping bees who are not if it were not for the fear of the STING! This is a terror that lives only in the minds of the unenlightened and inexperienced. What thousands are doing all the time other thousands can do. It's all in knowing how.

Start a little apiary. You can't lose much with

one or two colonies—and you are sure to learn enough new things to pay you back with big interest every penny you may put into the venture.

(4) Two-Cow Dairy

Or, one if you please, or three. When butter is 60c a pound and milk is 40c a gallon it's up to a man to make his own butter and milk when he can. With a little two- or three-cow dairy the butter will be incoming and more and the milk bill will be wiped out—and this ought to mean a saving of several scores of dollars every year. Besides, the fertility furnished from the cow stalls will multiply the productiveness of the garden, and the waste milk will be worth nearly the care of the cows as food for growing chicks and laying hens.

Thousands of people should return more to the simple life of the fathers in the churning of their own butter from a few cows. The almost prohibitive prices of milk and butter and meat render it practically a necessity that the people should return more and more to the good old habit of making the farm, small or large, the place where "raw material" is converted into the "finished product." This will relieve us largely of the perennial task of cussing the "middle men."

Be your own middle man and you will not feel in duty bound to gnash your teeth every time you pay a butter or milk bill. The people are solving the egg problem right along this line. Let every poultryman appreciate the possibility of solving the milk and butter problem in the same way.

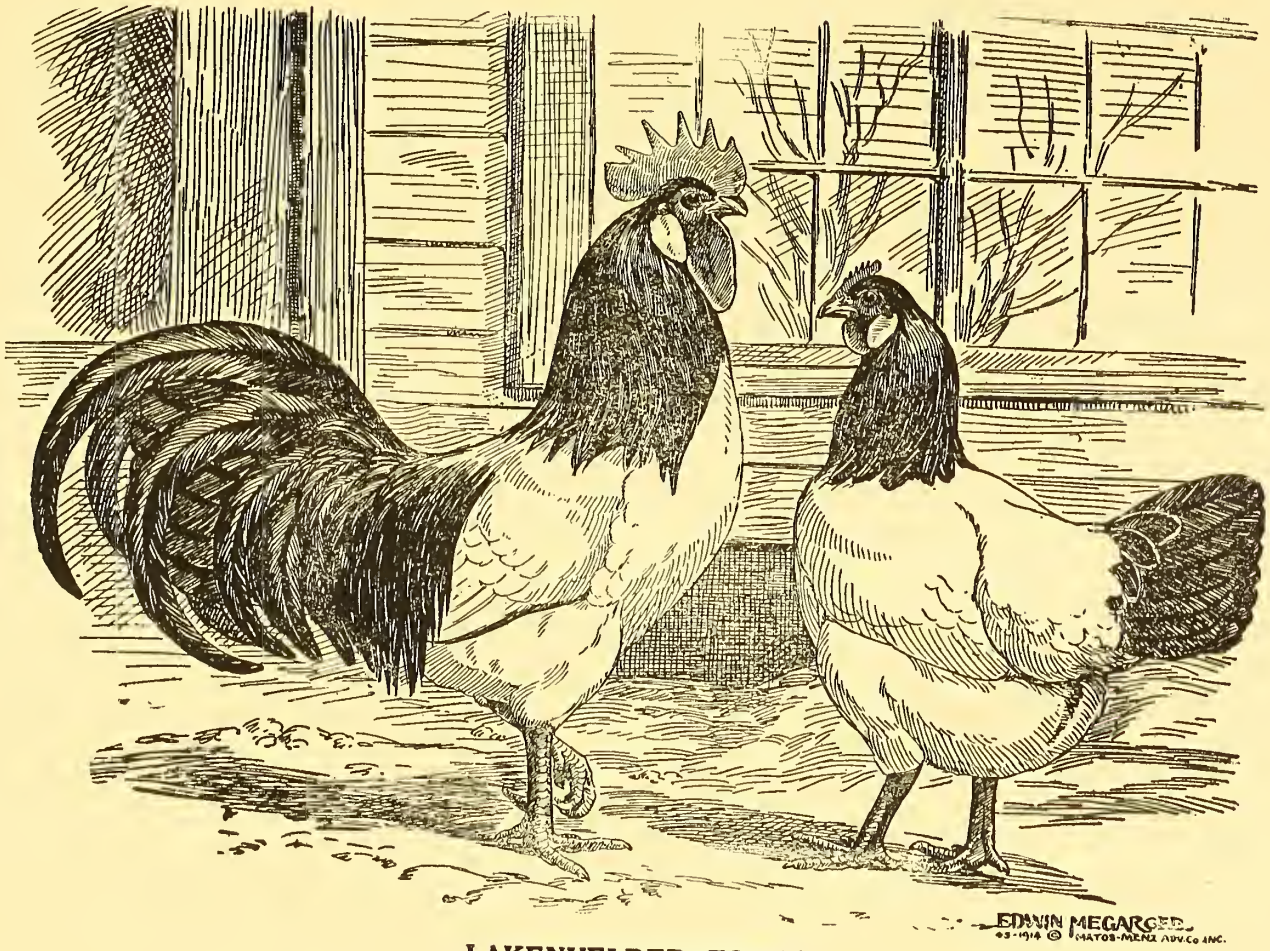
(5) A Little Journalism

Write your thots out now and then in such form that they can be put into cold type and look well when you read them. If you wish to come to a clear understanding with yourself on any subject that you have been investigating, try to put it systematically and transparently before the readers of a poultry journal. Sit down and think till your head aches in the effort to state a problem definitely and then write out the solution of it in detail for the enlightenment of some one else. You'll be surprised!

In the first place you will be astonished to discover how foggy your own grasp of the subject is. As you tug along sweatfully you will begin to appreciate the value of the English language. A glow will sweep over your soul as you are thrilled by a desire and determination to get a better knowledge of that language. The infinite meaning of a DICTIONARY will begin to dawn upon you. There will be born within you a new sense of the respect which you should entertain for the editors of our poultry journals.

But when you have done your "level best" at putting your findings in "black and white" for the printer, you will discover that you understand the subject a great deal better than you did before you took pen or typewriter in hand. A little journalism is a wonderful clarifier of one's vision. Try it. It will be worth your while to "put it in writing" even tho you never see it in print. But send it on. Get into the game. You may discover a mine of joy and a source of profit that you never dreamed of.

We can't all work all of these sidelines. Many of us will be able to, however. Let each select the ones he can handle to the best advantage and add to his list as time and safety may warrant. In short, boom the **Main Line** by booming everything that will make for the success of the **Main Line.**



LAKENVELDER FOWLS

Lakenvelder Fowls

The Lakenvelder has not, as yet, been accorded a place in the American Standard of Perfection, but in Europe it has received general recognition by poultry organizations. It is striking in appearance, much like a White Leghorn, with velvety black tail and hackle. The breed originated in Germany, and is most valued for the production of white-shelled eggs. It is said to be hardy and a great forager, picking up much of its food if given a wide range. Adult males weigh about 5 pounds; females, 4 pounds.

A GERMAN CONTRIBUTION TO THE POULTRY YARD

In the whole list of fowls bred in America the Lakenvelder seems to be the only one which originated in Germany, excepting the recently introduced Rhinelander. Even this breed has made but little headway here, though it possesses many characteristics to commend it. Like many other foreign breeds of merit, it suffers because it is not generally known.

The name Lakenvelder—or as it is commonly spelled in Europe, Lakenfelder—is said to come from the appearance of its plumage, resembling white linen (laken) spread over a black field (feld). In America it is sometimes referred to as a "shadow on a sheet."

The combination of black and white is always striking. In this case the contrast is most pronounced, as the black and white are massed and are clearly defined. The body plumage should be pure white, while hackle, saddle and tail are velvety black. It must be confessed that it is not an easy matter to produce perfect specimens, as the tendency is for the white to show up in the black sections, and the reverse. But the same may be said of all parti-colored fowls, so this objection is not an unusual one.

In both sexes the comb is firm and stands upright. The body is long and deep at the rear. Legs are of medium length, straight and trim.

Eyes are red or chestnut; ear lobes, white; beak, dark horn; shanks and toes, blue or slate.

Fowls of this type, especially with dark shanks, do not meet the requirements of the leading American markets. However, the Lakenvelder is not to be despised, as its flesh is of excellent quality and well distributed. Its great value lies in its egg producing ability. The hens are non-sitting and lay eggs which are rather large in size, with white shells.

The chicks are reasonably hardy; in fact, are much like Leghorn chicks in this respect.

Lakenvelder fowls do best when given free range. They are great hustlers and foragers, and those who breed them claim that they will secure much of their living from the range if given an opportunity and thus greatly reduce the cost of keeping them.

The breed first came to public notice about seventy-five years ago in certain parts of Germany. Many authorities state that it probably sprang from the Campine, which was then largely bred in the same territory. It has since been fairly well distributed over Europe, and specimens are to be seen in most of the important European poultry exhibitions. The breed probably reached America by way of England.

Chapter XXI

Lowering the Death Rate

"The man who can't remember when he made a fool of himself is one yet."

THE DEATH RATE among the growing chicks is a discouraging phase of poultry culture. The question is not, in the final analysis, how many chicks have you hatched, nor how many of your eggs were fertile, but **How many birds have you steered safely by the innumerable death traps?**

The first of June finds every poultryman in the midst of a vast wilderness of perils for his young flocks, whether small or large. I am amazed at the pitiable stories that so many pour into my ears—of death, or worse than death, among their chickens! Something is radically wrong. "Drastic" measures ought to be employed to save the lives of millions of our little American chicks. It is an industrial necessity in this very important business.

"S. O. S.,"—"SAVE OUR SOULS!"—is the pitiful wireless call that comes from countless little throats all over the land. What are we going to do about it?

Social workers are telling us that eight white babies are born in the United States every minute of day and night. They tell us also that twenty of every 100 of these white babies die before they are a year old. Only three of the 20 that die are fed at their mothers' breasts. "There's a reason" for high death rates among chickens as well as among children. Rather, there are reasons, as we will try to show.

A chicken well hatched is half grown—"other things being equal," of course. The toughness of the fiber of a newly hatched chick is the measure of his resisting power in the battle for life which every living thing must fight to the finish.

This "toughness of fiber" will also depend on the fiber toughness of both father bird and mother bird. **Never forget it!** You produce chicks at your financial peril when you gather eggs at haphazard and hatch them with no regard to the kind of birds that laid them and the character of the cocks that fertilized them.

"As is the mother so is her daugnter"—a Scriptural proverb as true today as it was twenty-six hundred years ago when Ezekiel quoted it. And the father has just as much influence as the mother.

If you want chicks that are worth-while, hatch eggs that are worth while.

And the incubating process is just as important as the parentage of the chicks. The most vigorous parent stock in the world can't save its offspring from certain death in an incubator that is left to run itself. I have seen the finest chicks that ever I looked upon, literally roasted to suffocation before they were taken from the incubator. True, they were revived afterward; but the death blow had been dealt them. They might just as well have been buried in their "asphyxiated" condition.

Thousands of the most vigorous chicks are introduced to the world in this form—a forced physical state of "suspended animation." It's a pretty heavy handicap. The seeds of death are sown in fertile ground—and death is bound to be the harvest. Sometimes it is an accident. At other times it is from pardonable ignorance. Too often it is the result of costly negligence.

The man who has not the time to care for an incubator full of chicks as they come to the hatching point had better give up hatching by this method. In fact the people who haven't the time to bring chicks into the world in the best possible condition better not try to raise chicks until they are able to give the required attention to them. "There's nothing in it."

Absolutely safe quarters both day and night—Yes, I mean "both day and night."

The marvel is after all that so few thousands die! I am astounded that little chicks in such large numbers escape the innumerable traps that their ill fates set for them. Day and night they are compelled to run the gauntlets of death.

On the farms especially the mother hen is turned loose with her brood of tender things to bring home at night the remnant from the age-long battle of the survival of the luckiest. Often this "remnant" grows smaller and smaller, day after day, till the old "cluck" has not one chick to answer to her anxious call!

I have said "absolutely safe quarters." Why not? If the business is worth doing at all it is worth doing well—it is worth doing thoroly.

A hundred chicks well hatched in May should be worth a hundred dollars at least the following December. They should be cared for upon this basis of the estimate of their value. If the poultryman could keep the vision of their value next December constantly before him he would try to make their conditions both day and night as secure from danger as any other property of equal value.

A roll of ten ten-dollar bills would certainly be kept where no possible harm could befall it. The best vault in the best bank in the country would not be too good and secure for that roll of bills. Why not be equally careful to protect from destruction a flock of chicks that will be worth an equal amount next December?

Nine of every ten poultry keepers must revolutionize their methods in this matter of safe quarters before they can hope to have a success worth the name. The "varmint"-proof fence must be built and kept in strict repair. There must be a place for the chicks and they must be kept in their place. Their "range" must be a danger-proof safe, the combination of which must not be known by any prowling murderer of day or night.

This can be done. It is needless and an unmitigated nuisance for chickens to be permitted the freedom of the whole countryside.

The "varmint"-proof coop must also be built and kept in strict repair.

The numerous enemies of our precious flocks must be compelled not only to get thru a skunk-proof and a fox-proof fence in order to satisfy their wolfish hunger on the tender flesh of our young birds, but they must be required to penetrate into an impenetrable "citadel." Thus, making security doubly secure, the death rate will be brought to the minimum so far as marauding animals are concerned.

But after all these precautions heed must be given to the comfort and safety of the night quarters—lest filth and vermin and the peril of crowding do away with half the flock. Thousands of young chicks up to three months old are killed, or crippled for life, by unsanitary conditions during the vitally important period between darkness and daylight. A little care will save from loss in this respect. A little care I say. It is easier to save them than to lose them. Five minutes at the roosting time in inspecting the night quarters may save several dollars worth of birds some hapless day.

These things must be done if good fowls in large or small numbers are to be raised.

Feeding is another decisive factor—

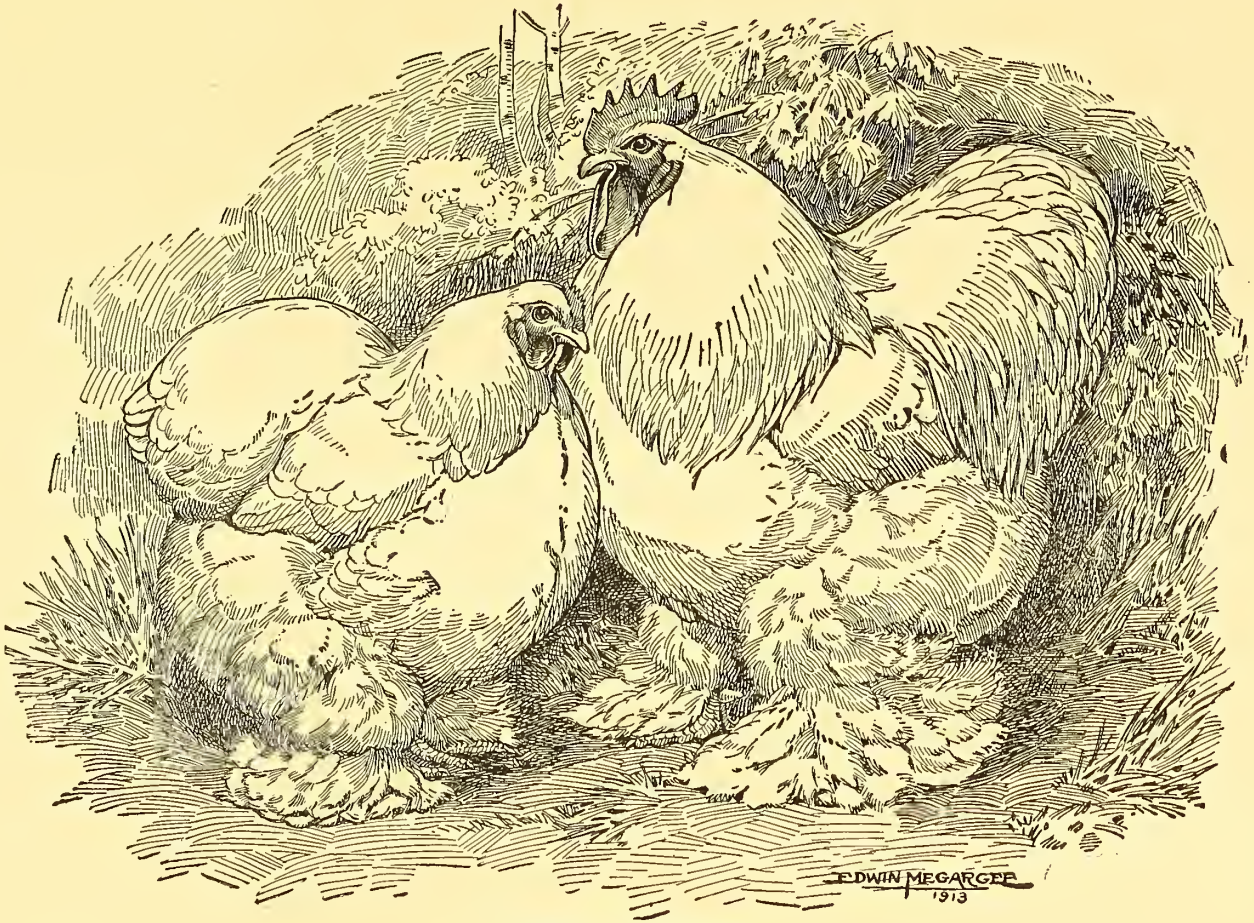
(1) Sufficient in quantity—A promising chick is a huge feeder. If he will not eat you may as well kill him at once. His appetite is your only hope after all. There is danger of over-feeding; but nothing can remedy under-feeding. Chicks that do not get enough to eat will weaken and become stunted for life.

The most certain antidote for a wasting disease in a human being is plenty of nourishing food. Lack of food is the awful scourge among the poor of the great cities. The children weaken, dwarf, and are easy victims of disease and of unfavorable social conditions. Dr. Josephine Baker says there is three times as much danger in being a baby in a crowded city as there was in being a soldier on the western front in France. The same principle holds in the raising of domestic animals of all kinds—food must be sufficient and environment right or they will die by thousands.

(2) Balanced in variety—The peril of over-feeding is almost always the result of feeding too much of one thing. Certain elements are lacking and the system is not satisfied. One part of the body is oversupplied while other parts are starved. Rich food of one variety will work harm. The point is never to be lost sight of that the growing chicks should have about the same variety that they would get out in the open from the lavish supply of nature.

I have been surprised to see poultrymen feed such a large amount of one kind of grain. There are still many who are killing their flocks by feeding too much corn. Others are committing the same sin in the feeding of wheat; for this best of all grains for the feeding of fowls may easily be overworked. And so with all of the different kinds of grain. The ready mixed scratch foods are well worth the attention of the man who is raising many young chicks. The standard brands are prepared according to the findings of science on the subject of the "balanced ration," and until the poultryman is able to mix his own feed it will be well for him to buy these well advertised poultry foods.

(3) Wisely, regularly, and economically given—"Wisely," really covers all. Regularity is of great importance. Don't starve them one day and gorge them the next. Run the feeding as regularly as clock work. This is as important on the poultry plant as on the dairy farm. The best dairymen will not vary five minutes in their feeding times from day to day. When the poultrymen get down to scientific principles as seriously and as persistently as the dairymen, the "death rate" will be enormously lowered and the profits will be greatly enlarged.



WHITE COCHINS

White Cochins

At some time prior to the middle of the last century, ships touching at Asiatic ports brought to this country some fowls of presumably Chinese origin, which attracted great attention because of their tremendous size. These received wide publicity, and astonishing tales were circulated regarding them. From this original stock American breeders developed the Cochin, which is bred in four distinct varieties. As now bred, Cochins are regarded as being strictly exhibition fowls and as a breed lacking in marked utility value. Some strains, however, are fair layers, and in certain sections of the country Cochin blood is used to increase the weight of table poultry. Cochins are distinguished by their great size and abundance of loose plumage. The desired weights are: cocks, 11 pounds; cockerels, 9 pounds; hens, 8½ pounds; pullets, 7 pounds. Because of their weight, they are unable to fly to any heighth, and may be confined by very low fences.

A MASSIVE EXHIBITION FOWL OF CHINESE ORIGIN

White Cochins are one of the most attractive varieties of this breed of fowls, which were originally imported into this country and England from ports in China between 1840 and 1850. Originally they were known as Shanghais, but later were given the name by which they are now known.

When first brought to this country the Cochins were tall, rangy fowl with long shanks and necks. They were very irregular in color and markings and showed a tendency to have feathered legs.

By careful selection and mating the breed has been brought to its present form, and the type has become fixed in all the varieties. While these changes have undoubtedly produced a breed of great beauty, it cannot be denied that they have caused a falling off in utility qualities. Formerly the Cochin was a good layer and was well considered for the table, but it is now bred almost exclusively for exhibition, and when so bred is not considered a utility fowl.

To the admirer of this breed, however, their marvelous perfection of feather and their very real beauty more than make up for any shortcomings they may have.

The Cochin is deep bodied, large and with profuse feathering. They have the peculiarity of carriage, slightly stooping forward. The contour should represent a series of graceful curves giving an appearance of rotundity. This effect is produced by the extraordinary profusion of soft, loose feathers, which also give an impression of greater size and weight than they really possess.

The standard weights for these fowls are 11 pounds for the cock and 8½ pounds for the hen.

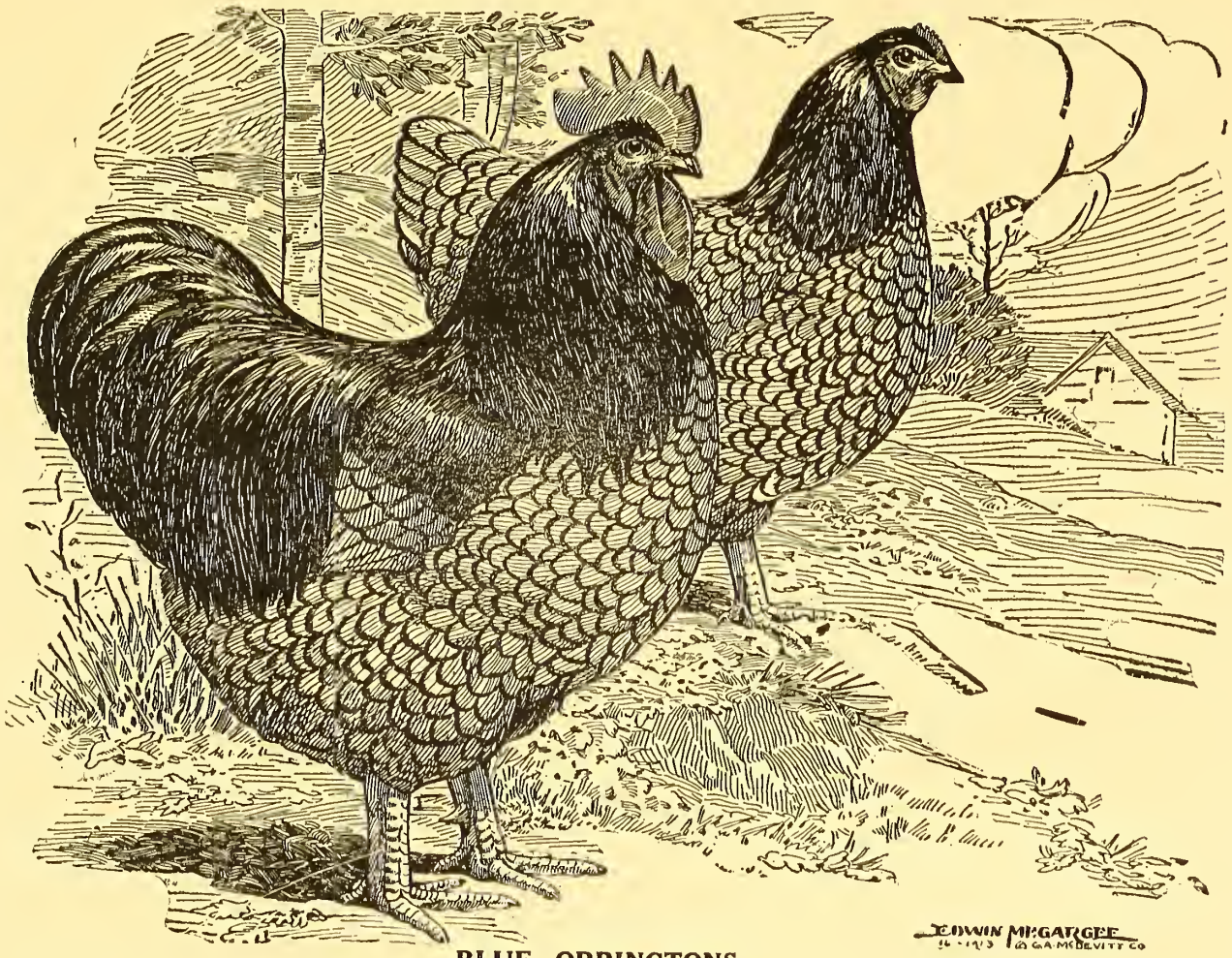
The head should be short, broad and deep, with the skull overhanging the eyes. The comb is single, medium in size and should have five regular points. The face, wattles and ear lobes should be fine and smooth in texture and the wattles should be long.

The neck is short, shoulders very broad and back short and well rounded. The breast is full and of great depth, the whole presenting an appearance of tremendous breadth and massiveness. The legs should be strong and set well apart, covered with long, soft feathers, hiding the hock joint and growing down on the shank and out on the middle and outer toes, so that the legs and toes can scarcely be seen.

In the male the saddle should incline upward over the tail and should be very profuse. The tail should be short and broad, the main tail feathers being completely covered by the sickles and coverts.

In the female the cushion rises from the back of the neck, and describing an arc, almost completely covers the main tail feathers, looking like a great globe of feathers.

The beak should be yellow, the eyes reddish bay, the face, wattles and ear lobes bright red, while the legs and toes should be golden yellow. The plumage should be pure white in every section, in both web and quill. The expression "white to the skin" best describes this.



BLUE ORPINGTONS

Blue Orpingtons

The Blue Orpington is the latest and perhaps the most beautiful variety of this great English breed. The plumage color is a combination of slaty blue, dark blue and black, distributed as shown in the accompanying illustration. Like all the Orpingtons, these birds are blocky and meaty, making excellent table fowls. The hens are fair producers of brown-shelled eggs. This striking variety promises to become exceedingly popular.

THE NEWEST ORPINGTON

Perhaps no breed has ever attained such widespread popularity in so short a time as has the Orpington. Its rise has been meteoric, and it is now a fixed star in the poultry firmament.

Originated by the late William Cook, of England, who produced four varieties, this breed immediately caught the popular fancy, leaped into prominence, and today it can be safely said that in this country the Orpington is easily among the leaders; this popularity has been maintained by the very real worth of the breed and not alone by the "booming" which it has been given by enthusiastic admirers.

The story of the origin of the Orpington is a long one, as each variety was produced by different means and bred to a fixed standard. However, the main wellsprings of blood were the Hamburg, the Cochin, the Langshan and the Dorking.

The first variety to be brought out was the Black; then came the Buff; later the white, and finally the Jubilee. Within the last few years a new variety has been added to this list, one that already bids fair to rival the others in popular favor. This is the Blue Orpington, which is shown in this illustration.

This variety was probably produced by crossing of the Black and White Orpington. The crossing of the black and white sometimes produces a certain percentage of blue, or slate-colored young, having black top-color, and by the judicious selection and mating of these specimens it is possible to produce a strain that will breed fairly true to color.

There is one characteristic of the Blue Orpington that should not go unmarked, and that is the tendency to breed true to type. It is really remarkable that a variety still in its infancy should produce such a high percentage of typical specimens. In fact, the very best types of Orpington that I have ever seen are of this variety.

In shape the Blue Orpington should conform to the breed standard in every particular.

In color it is a combination of blue and black. In the male the hackle, wing-bows, saddle coverts and sickles are a lustrous bluish-black. The wing-bar, wing-bay, body fluff and main tail feathers are a clear, medium shade of slaty blue, each feather laced with a darker shade. The nearer this latter shade approaches black the better.

The female has the hackle black, the rest of the plumage being slaty blue laced with a darker shade.

The comb, face, wattles and ear lobes are red, as are the eyes. The beak is horn color, while the legs are leaden blue.

The weights for this variety are: cock, 10 pounds; cockerel, 8½ pounds; hen, 8 pounds; pullet, 7 pounds. The hens are very good layers of brown-shelled eggs, and are dependable sitters and mothers.

Chapter XXII

Fifteen Acres and Up

"A little farm well tilled, a little house well filled, a little wife well willed, are great riches."—Franklin.

A HUNDRED years ago ninety-five per cent of the people of the United States were farmers. The building of great cities and the development of manufacturing interests have drawn the people by tens of millions to the centers of population till today thousands of farms are abandoned or so poorly cultivated as to be profitless.

Prof. R. L. Watts of State College, Pa., says that "Thousands of car-loads of cabbage, tomatoes, celery, lettuce, asparagus, melons, and a long list of vegetables are annually supplied to our markets." "It is a lamentable fact," he continues, "that the bulk of the vegetables consumed in Pennsylvania is supplied by other states."

This ought to suggest an alarming condition of affairs. If Pennsylvania, peculiarly adapted in every sense for agricultural purposes, cannot produce her own vegetable food—and if she is a fair sample of other states—we are rapidly reaching a condition that is nothing short of acute.

The remedy lies in Readjustment. Hundreds of thousands who ought to be out in the open country are living at "a poor dying rate" in the smoky, sooty city. The vitality of the nation is being sapped and millions are sustaining an untold loss thru this mal-adjustment of our population.

One of the supreme missions of the students of Sociology is to get the people back to the land and keep them there. The small farmer is the great crying need of the American people today. It is not the man who owns and cultivates a farm of 1000 to 10,000 acres that is so much needed. The "Agricultural Corporation" is not the desirable thing. We already have too many of these. It is the small proprietor who is needed. It is the "fifteen acres and up" farm that America is suffering for—and the "up" should not go far above 100 for the most desirable ideals.

Dr. Harvey W. Wiley says, "My hope is that there may be developed in this country millions of land owners, so-called, who have a personal interest in the body of land on which they live, who care for it as they would care for their horse or their child, who take a delight in the fertility of the fields, who are not ambitious for high social or political preferment, but are ambitious to lead clean, wholesome, and useful lives of industry." At the same time he expresses fear that the tendency is away from the realization of his hopes.

It is heart-rending to see the millionaire come along and purchase from two to a dozen fine farms and mass them all into one great domain to become a mere playhouse for himself and his heirs forever! This wholesale assassination of the agricultural instincts and possibilities of the rank and file of the people means the herding and driving of hundreds of thousands more into the stifling cities every year. The land belongs to the People—it should not be surrendered to the millionaire potentate.

For a thousand years the common man in England has been a slave to the "lords" who received their immense estates as a military gift from William the Conqueror. The amazing thing is that a nation-wide revolution has not long ago swept the land-laws, together with the "landed aristocracy," from the face of fair England. Her more than thirty millions, (not "mostly fools" as Carlyle expresses it; but victims of intrenched tyranny and injustice), will never have a "square deal" at making a life and a decent living till every man has a right to own his own acres in fee simple, and sit down with his family "under his own vine and figtree."

America's millions of square miles are within the reach of every common man as yet. It is for him to say whether he will make the most of this "inalienable right to life, liberty and the pursuit of happiness" in his own house and on his own beloved soil. The swing at this time is in the direction of danger, tho there are some signs that are favorable. There is hope that we are at least nearing the "dividing of the ways." There is a great revival all over the land in strictly rural interests. "Back to the Land Leagues" are being formed, and many of the ablest scholars, scientists and statesmen of the day are giving special attention to this great subject. And well they may; for it involves not only the financial welfare of the people, but the moral, the social, the intellectual and the spiritual welfare of our entire population.

Every poultry paper and every agricultural paper should be intensely interested in this "fifteen acres and up" proposition.

"When the poor give to the rich, then the Devil laughs," is an old saw. Its force and wisdom should be recognized in this discussion. The average man is not "rich"; but he is "the people." It is for him to know of his rights and privileges thru the various means for his instruction and inspiration. The public press in every form should place before this common man the many opportunities for realizing the highest ideals of life. The rich cannot be seriously blamed if they take the land as a "gift" from the poor. But the Devil will laugh just the same—because he knows well

that the interests of the common man are hit hard every time the thousand-acre estate is organized.

The "Science of Agriculture" is revealing to us more and more the large possibilities of the fifteen-acre farm. For larger things a larger estate up to 25, 50, or even up to 150 acres might be required. The magnificent marble palace is, without question, beautiful to look upon. There is something grand, approaching the sublime, about it. But the paradise for the common man is not the marble palace. It is the thoroly equipped farm home—not so measureless in its dimensions, not so magnificent in its embellishments, as to confuse his vision and burden his mind—but so simple in its arrangements and so attractive in its appearance as to make him feel content, happy, and AT HOME.

There he may have every joy and every comfort for every season of the year. He has an abundance of "elbow room" for himself, his family and his numerous flocks. He has shade and sunshine, house shelter and barn shelter without stint, fields and woods, springs and brooks. He can raise from his broad acres everything that he needs to eat or drink. The possibilities hidden in the bosom of twenty-five acres of land are practically beyond calculation.

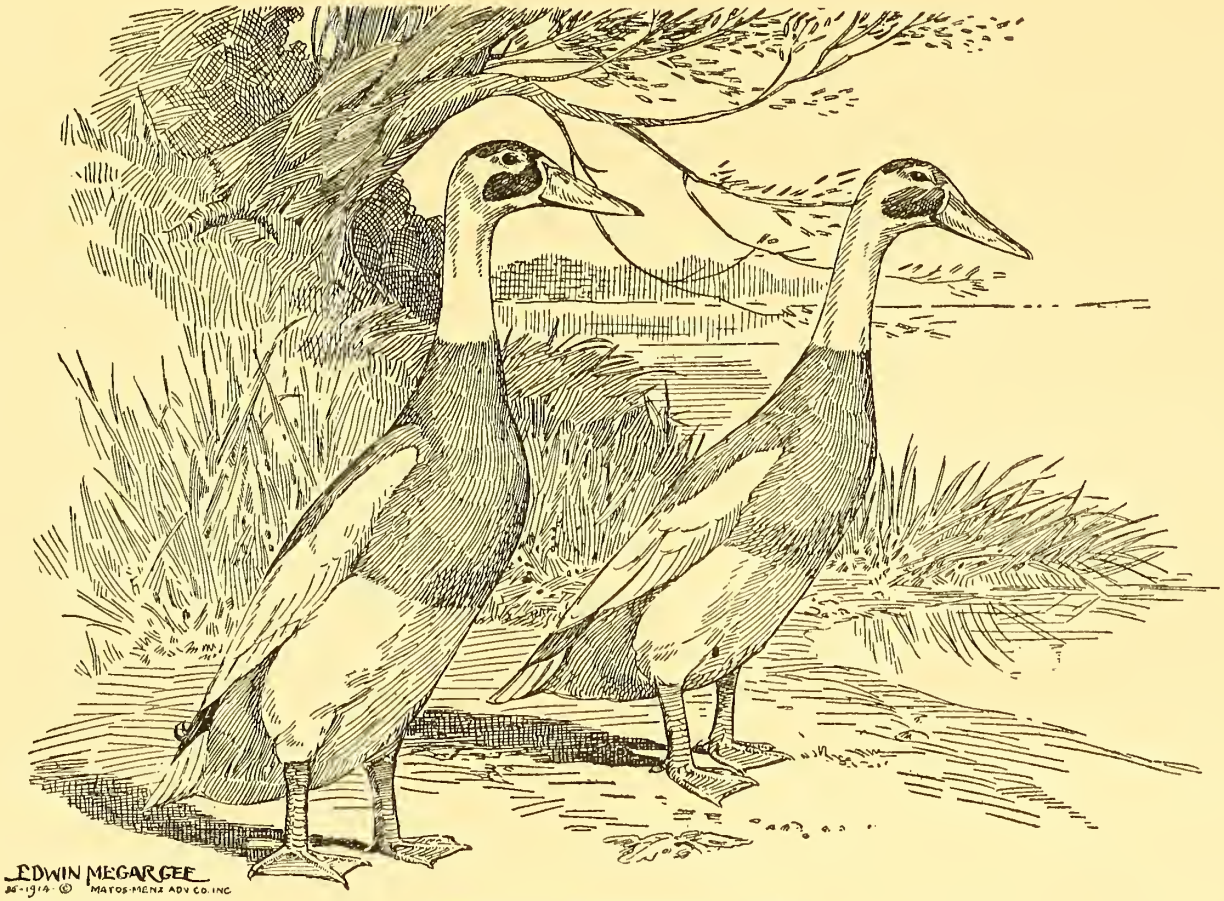
Suppose one of those acres is used for the living spot, including the house, the out-buildings, spacious lawns and a beautiful flower and vegetable garden. Suppose another acre be devoted to greenhouses and hot beds. Devote another plot of two acres to a thoroly down-to-date poultry plant. We have now occupied only four of the 25 acres. Think of the possibilities of one whole acre under glass! Try to estimate the amount of business a first class poultryman could do on a poultry plant covering two acres economically and intensively utilized! With even the minimum plot of fifteen acres, it is easy to be seen that the right kind of a man could accomplish marvels and live like a king.

A few of the best cows—from one to ten, according to taste or inclination—an all-purpose horse, or, quite probably, a pair of fine horses, a few sheep, a strictly modern hog house well filled and well cared for, a field of corn, another of oats, another of wheat, a couple of acres of alfalfa—these are mere suggestions of the possibilities in the small farm for the common man. Such things are what a growing family have need of. There is no condition in life more ideal than that which I am trying to describe.

Such a little place of business with mail brot to the door, church and school close at hand, with good markets and town privileges within easy reach, lifts a man to the very pinnacle of advantage and independence. Such a home and such an environment furnish an ideal basis and atmosphere for an ideal Christian and social civilization. With the modern omnipresent telephone, automobile, trolley car, and traveling library—to say nothing of the steam car, and the express and parcel post systems—"country," strictly speaking will have disappeared. Already distance is annihilated in every civilized land. Everything has become either city or suburb.

Let us all give the glad ear, therefore, to the call of the soil! There is nothing that will give the poultry business a bigger boom than the small farm intensely cultivated. The great estate usually pays small attention to the culture of fowls. It is the countless small places which roll up the columns of poultry statistics. Get more of our millions of people out on the "fifteen-acres-and-up" farms, and poultry culture will forge ahead in the same measure.

Multitudes are longing deep down in their souls to get out from the great town into this ideal condition of life which I have so meagerly described. I believe that it is the thing that will do more for the people, individually and collectively, than any other social movement that could be brot about.



INDIAN RUNNER DUCKS

Indian Runner Ducks

This peculiar duck originally came from India, and has been bred in England for three-quarters of a century. The name is derived from its native home and its odd gait. The birds are small in size, lean in appearance and upright in carriage. Their color is fawn and white, distributed as shown in the drawing. Indian Runner Ducks are wonderful layers of white-shelled eggs of good size and fine quality. They are being extensively used by producers of market table eggs.

DUCKS WITH GREAT LAYING RECORDS

The first sight of the Indian Runner Duck invariably excites amusement. The odd shape, coupled with the stilty and peculiar carriage, gives this duck a most extraordinary and grotesque appearance.

On better acquaintance amusement gives place to respect, when the remarkable qualities of this duck are fully appreciated. It is not a thing of beauty, but it is most distinctly a business bird.

The original stock was brought from India to England prior to the middle of the last century. Other importations have been made, even as late as 1906.

The name "Runenr Ducks" evidently comes from the peculiar gait of these birds, which is unlke that of other ducks. They do not waddle along, but run or trot wherever they go.

Two varieties of Indian Runner Ducks are bred in America—fawn and white and the pure white. The latter is a sport from the first named variety, and is less extensively bred than the older kind.

In body conformation these ducks are tall and slender, much like a soda bottle on legs. This upright carriage is a most distinctive feature.

Another unmistakable characterstic is the long, lean and very flat head and bill. The line from the crown of the head to the tip of the bill should be straight or very nearly so. The eye is placed very high in the head, giving the appearance of being on top of the skull.

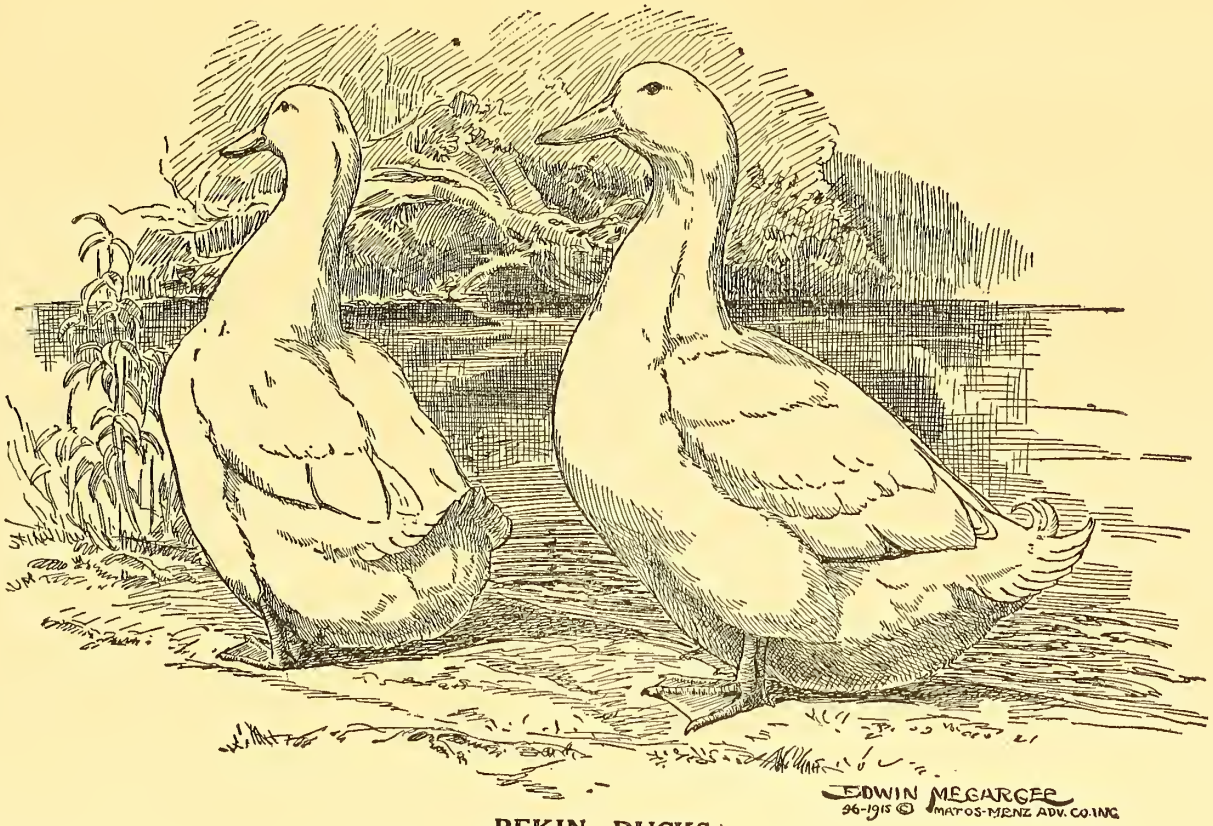
In the Fawn and White variety, which is shown in the illustration, the color should be as follows. Bill, yellow and greenish yellow, with black bean; shanks and toes, orange red, and eyes dark brown.

The head is fawn and white, darker in the male than in other parts of the body. A white line divides the cap from the cheek patches, and also the base of the bill from the head markings.

The neck is white to a point about two inches above the base, fawn below. This fawn color continues down the breast to a point midway between the point of the breastbone and the legs, and then gives way to white.

Shoulders and tops of wings are fawn, the wing primaries and secondaries white. The back is fawn throughout. Tail feathers of ducks light fawn; of drakes, bronze-green. It is essential that the markings be distinct and clean-cut.

The birds are hardy and easy to manage. Youngsters make rapid growth, and come to laying maturity early. In view of their undeniable value, it is safe to predict that Indian Runner Ducks will be bred extensively in the future.



PEKIN DUCKS

Pekin Ducks

The magnificent Pekin Duck is the favorite among commercial duck growers in America. The breed was produced in China, and first appeared in America ebout forty years ago, the earliest shipment coming direct from Pekin. The plumage is white in all sections; eyes deep leaden blue; bill, shanks and feet, orange. Pekin Ducks are hardy and easy to handle. They are very good layers which is a valuable characteristic. The ducklings are strong and hardy, grow rapidly and reach market weight at an early age.

THE GREATEST MARKET DUCK

China is said to be one of the greatest duck-producing countries, and the Chinese growers of ducks produced the breed which we now know as the Pekin. It must be admitted that the early importations did not show the present-day type, but the Pekin quickly became popular and is really the foundation upon which our huge duck-growing industry is founded.

Pekins were first taken to England in 1872 by a Mr. Harvey, who carried them to his native home direct from Pekin. The first American importation arrived in New York early the next year, the birds having been purchased in the Pekin market by a Mr. Palmer, of Connecticut, who was returning to his home in that state.

Many years of careful breeding were required to fix the desired type and sound color, but this was accomplished long ago, and the Pekin is today the undisputed leader among American market ducks.

Briefly stated, the reasons for this great popularity are many, including the following important points:

The Pekin is particularly hardy and thrives in all parts of the country regardless of climatic conditions.

It is a prolific producer of eggs, thus making possible the sale of a large number of ducklings from a small flock of breeders.

There is not much difference in the weight of drakes and ducks, so all the ducklings of a given hatch reach market maturity at about the same time. This permits the grower to sell them without sorting out and holding the females for further development.

Pekin duck males weigh eight and nine pounds, females seven and eight pounds, according to maturity. They have long, wide bodies, full breasts, and deep keels. The nicely arched necks are fairly long, the head large, the bill long and broad. It is most desirable that the whole body be nicely rounded and have a well-balanced, plump appearance.

NATIONAL AGRICULTURAL LIBRARY
1022588079

* NATIONAL AGRICULTURAL LIBRARY
1022588079